

*Alcan
Aluminium
Limited
Annual
Report 1981*

81

Cover photo:

Coils of aluminum sheet at the Algoods plant of Alcan Products Canada Limited in Toronto, Ontario, are used to make various industrial and consumer products.

Highlights of 1981

Principal highlights

	1981	1980	1979
Total shipments of aluminum ('000 tonnes)	1,547	1,588	1,532
Shipments of ingot products	510	533	496
Shipments of fabricated products	1,037	1,055	1,036
Total sales and operating revenues (U.S. \$ millions)	4,978	5,215	4,390
Net income (U.S. \$ millions)	264	542	427
Capital expenditures (U.S. \$ millions)	974	752	495

Financial, at end of year

(U.S. \$ millions)

Working capital	1,486	1,373	1,275
Net fixed assets and investments	3,543	2,767	2,168
Long-term debt	1,612	910	759
Common shareholders' equity	2,631	2,463	2,030
Return on average shareholders' equity (%)			
Historical cost method	10	24	23
Current cost method	1	8	6

Common shares (U.S. \$)

Net income per share (including extraordinary gain)	3.24	6.70	5.28
First quarter	1.01	1.83	1.19
Second quarter	1.09	1.70	1.35
Third quarter	.82	1.63	1.29
Fourth quarter	.32	1.54	1.45
Dividends per share	1.80	1.35	1.05
Number of common shares outstanding (at end of year — thousands)	82,652	80,893	80,893

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MAR 10 1982

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Annual Meeting

The Annual Meeting of the shareholders of Alcan Aluminium Limited will be held on Thursday 25 March 1982, at 10 a.m., in the Chateau Champlain Hotel, Montreal.

Directors and Officers

Directors

Nathanael V. Davis Osterville, Massachusetts <i>Chairman of the Board</i>	Paul H. Leman, O.C. Montreal— <i>Director of various companies</i>
Sonja I. Bata Toronto— <i>Director of Bata Limited, International footwear manufacturers</i>	Franklin S. McCarthy Brockville, Ontario <i>Director of various companies</i>
David M. Culver Montreal— <i>President and Chief Executive Officer</i>	Hon. John L. Nichol, O.C. Vancouver— <i>President of a private investment company</i>
Dr. Lawrence E. Fouraker Boston— <i>Professor of Business Administration, Harvard Business School</i>	Patrick Jean Jacques Rich Montreal— <i>Director</i>
Dr. Roger Gaudry, C.C. Montreal— <i>Director of various companies</i>	Eric A. Trigg Montreal— <i>Senior Vice President</i>
John H. Hale Montreal— <i>Senior Vice President</i>	William O. Twaits, C.C. Toronto— <i>Director of various companies</i>
Lionel P. Kent Montreal— <i>Director of various companies</i>	Eric F. West Lyme, Connecticut <i>Senior Vice President</i>
	Dr. Joachim Zahn Munich— <i>Director of various companies</i>

Audit Committee

Lionel P. Kent, *Chairman*
Sonja I. Bata
Paul H. Leman, O.C.
Franklin S. McCarthy
Dr. Joachim Zahn

Personnel Committee

William O. Twaits, C.C., *Chairman*
David M. Culver
Dr. Lawrence E. Fouraker
Dr. Roger Gaudry, C.C.
Hon. John L. Nichol, O.C.

Office of the President

David M. Culver <i>President and Chief Executive Officer</i>	Eric A. Trigg <i>Senior Vice President</i>
John H. Hale <i>Senior Vice President and Chief Financial Officer</i>	Eric F. West <i>Senior Vice President</i>

Functional Officers

R. C. Bales <i>Vice President, Corporate Planning</i>	D. G. Cuthbertson <i>Vice President, Finance</i>
A. A. Bruneau <i>Vice President, Chief Legal Officer and Secretary</i>	J. Hugh Faulkner <i>Vice President, Environment, Occupational Health and Safety</i>
Duncan C. Campbell <i>Vice President, Corporate Projects</i>	H. Stewart Ladd <i>Vice President, Organization and Management</i>
David H. Clarke <i>Vice President, Personnel</i>	H. Stuart McEvoy <i>Vice President, Metal Planning and Administration</i>
W. O. Codrington <i>Vice President, Basic Raw Materials</i>	Allan A. Hodgson <i>Treasurer</i>
Harold Corrigan <i>Vice President, Corporate Relations</i>	Murray D. Lester <i>Director of Energy Resources</i>

Field Vice Presidents

Caryll Birkett Hong Kong— <i>Vice President, Asia</i>	Norman F. Macfarlane Montreal— <i>Vice President, Japan and Korea</i>
Gerald Clark Rio de Janeiro— <i>Vice President, Latin America</i>	David Morton Montreal— <i>Vice President North America and Caribbean</i>
J. B. Clarkson Sydney— <i>Vice President, South Pacific</i>	R. E. Rosane Les Milles, France <i>Vice President, Africa and Middle East</i>
Roy A. Gentles Cleveland— <i>Vice President</i>	Ihor Suchoversky Geneva— <i>Vice President, Europe</i>

Recent changes in management organization are highlighted in the President's Message on page 6.

The Chairman's Message



Alcan and the whole of the aluminum industry experienced an increasingly difficult year in 1981. During the first six months business conditions deteriorated gradually, followed by a more rapid decline in the second half. Inventories in the hands of producers continued to climb throughout the year reaching record tonnage levels, costs continued to escalate and prices weakened. In contrast to 1980, when most aluminum companies suffered little from the downturn, the impact of the 1981 recession was severe. Furthermore, these unfavorable conditions occurred in almost all world aluminum markets in which Alcan operates. As is more fully explained in the Annual Report, Alcan's earnings fell off in each of the first three quarters, to be followed by a more significant drop in the fourth quarter.

Alcan, having undertaken a major capital expenditure program, invested a record amount during 1981. The 1982 expenditures, while also large, have been trimmed back in view of the company's reduced cash generation and will be under continuing review as the new year progresses. It is expected, however, that the company's strategic growth will be able to continue, albeit at a somewhat slower rate than had been previously planned.

In the first quarter of 1981 the directors raised the quarterly dividend from 35 cents per share to 45 cents per share. At Alcan's board meeting today the 45 cent quarterly dividend payment was maintained.

During the year, Alcan introduced three Shareholder Investment Plans designed to permit shareholders to reinvest cash dividends or receive stock dividends in additional shares and to purchase shares directly from Alcan for cash. Shareholder response to the plans was very good. As of the end of 1981, more than 20% of the total shares outstanding were participating in the two Dividend Plans, and this has resulted in new equity of \$9 million. In addition, purchases under the Share Purchase Plan increased equity by a further \$15 million. It is expected that participation in the Dividend Plans will increase.

The Board met ten times during the year. It also visited Alcan's major U.S. rolling facility at Oswego, New York. The Audit and Personnel Committee held numerous meetings during the year, dealing with the issues within their portfolios.

Patrick Jean Jacques Rich will not be standing for reelection to the Board at the Annual Meeting. Mr. Rich has served as a director since 1976 and it is gratifying that his expertise and sound counsel will remain available to Alcan from his new position as Vice-President, Europe. He is spending the first six months of the year at the Graduate School of Business Administration, Harvard University, as an "Executive in Residence." To fill this vacancy, the name of Jean-Marie Poitras, o.c. Chairman and Chief Executive Officer of La Laurentienne Mutuelle d'Assurance of Quebec City, will be proposed for election at the Annual Meeting.

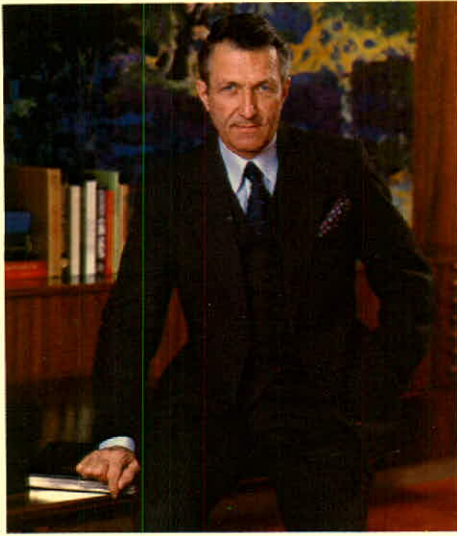
The directors are very conscious of the heavy demands made by today's difficult economic conditions on Alcan managers and employees in all locations and express their appreciation for their efforts and dedication.

Nathanael V. Davis

Montreal, Canada
4 February 1982

Nathanael V. Davis
Chairman of the Board

President's Message



The year 1981 was not an easy one. The grasp of the worldwide recession tightened considerably on the aluminum industry, and for the first time in six years Alcan Aluminium Limited's earnings fell from the previous year.

The recession which was first felt in Europe and Latin America in late 1980 and in North America in the second half of 1981, brought on a reduced level of demand for aluminum and a steady erosion of price realizations as the year progressed.

This erosion of price was the factor which most affected profitability and resulted in Alcan's earnings in 1981 falling to U.S. \$264 million, or \$3.24 a share from \$542 million, or \$6.70 a share in 1980.

While total free world demand for aluminum declined by about 6% in 1981, Alcan's consolidated tonnage of aluminum sold, including fabricated products, held-up reasonably well, declining less than 3% on the year. Total sales and operating revenues fell slightly to below \$5 billion after exceeding that level for the first time in 1980.

Alcan's European operations suffered significant losses as the major economies of this region remained in recession throughout all of 1981. Furthermore, the strengthening of the U.S. dollar against most currencies had a serious impact on profitability.

Results in Latin America were significantly reduced in 1981. Brazil, which has been a major contributor to Alcan's earnings in past years, suffered negative domestic growth in 1981, the first serious downturn in economic activity in many years.

Although the economic downturn in North America, particularly in the second half of the year, had an adverse impact on the results of Aluminum Company of Canada, Limited, this subsidiary which is responsible for North American and Caribbean operations, nonetheless posted a relatively good performance as net income for 1981 totaled \$288 million compared to \$421 million in 1980. This reflected in part good demand for selected fabricated products, particularly container sheet for the U.S. canning market.

Rate of return on average shareholders' equity, based on historical costs, fell to 10% from 24% in 1980. If adjusted to account for inflation, the rate was only 1% against 8%.

The efforts of Alcan's management for the past several years have been concentrated on controlling and reducing costs and identifying and entering the company in new markets. But, because of the severity of the economic downturn in 1981, these efforts had only limited success in avoiding a sharp reduction in the rate of return on Alcan's business.

Production

In light of deteriorating demand for aluminum in 1981, notably in the second half of the year, utilization of Alcan's smelters at full capacity—their most cost-effective rate—was not feasible. The Alcan group smelter operating rate was reduced by the end of 1981 to 91% of its rated worldwide capacity of 1,483,000 tonnes.

In Canada, Alcan reduced primary aluminum ingot production by yearend to 92% of total rated annual capacity of 1,018,000 tonnes by closing down one-half of a potline at the Kitimat, British Columbia, smelter, and postponing the scheduled start-up of the second 57,000 tonne-a-year potline at Grande Baie, Quebec.

The need for further production cutbacks will be determined by the extent to which the pressures associated with the current economic climate continue, and the attendant effect they have on the demand for aluminum.

Inventories

While the smelter production cutbacks announced by the major aluminum companies in 1981 were significant in volume, they came too late to prevent a very large build-up of metal inventories. According to the International Primary Aluminium Institute, world inventories of aluminum ingot rose throughout the year from 3,962,000 tonnes at the beginning of 1981 to 5,100,000 tonnes by the end of the fourth quarter, an increase of 29% over the year. This was, however, relatively less in terms of consumption than the build-up during the industry's 1975 recession, when 4,941,000 tonnes were accumulated by year end. Alcan entered 1981 with inventories of 485,000 tonnes. During the year, as orders declined, inventories rose steadily to reach 660,100 tonnes by year end.

The rate of increase in world inventory levels slowed noticeably in the last weeks of 1981, due mostly to the cutbacks in production. Any significant reduction in the level of inventories is contingent upon a pick-up in world demand for aluminum.

Capital Expenditures

One of the major challenges in a worldwide capital intensive industry such as our own is the selection and timing of strategic investments. This becomes particularly critical during a recession such as the industry is currently experiencing.

The beneficiaries of the anticipated market recovery will be those companies which have adapted successfully to the conditions of the recession, while retaining their basic financial strength and maintaining the most efficient and modern facilities.

Alcan's program for expanding and modernizing facilities and new investments required record spending of \$974 million in 1981. Of this total, \$452 million, or 46% was spent in the North American area, mostly in Canada.

Construction was completed on the second 57,000 tonne-a-year potline at the \$500 million Grande Baie, Quebec, smelter. Work on the third potline is expected to be completed in 1982. Major expenditures were made at the Vaudreuil chemical complex near Jonquière, Quebec, including work on installing energy-efficient fluid flash calciners for alumina that will reduce oil consumption by some 230,000 barrels a year when completed.

A continuing program to improve productivity, working conditions and environmental standards at Alcan's smelters and other facilities in Canada is an ongoing project likely to run through to 1995.

In Ireland, construction moved to 65% completion on the 800,000 tonne-a-year alumina plant at Aughinish, in which Alcan has a 40% interest, and which is expected to be ready for production in 1983. Additional significant outlays were made during the year to modernize and expand facilities in the U.S., the United Kingdom, Brazil and Mexico. Some further details of the 1981 capital expenditure program are contained in the Review of the Year section of this report.

Reflecting the reduced level of earnings in 1981, Alcan's 1982 capital expenditure program is expected to amount to about \$700 million. This figure for 1982 is significantly lower than the 1981 record level, and reflects the careful appraisal of the commitment of capital to major projects in the face of current economic conditions.

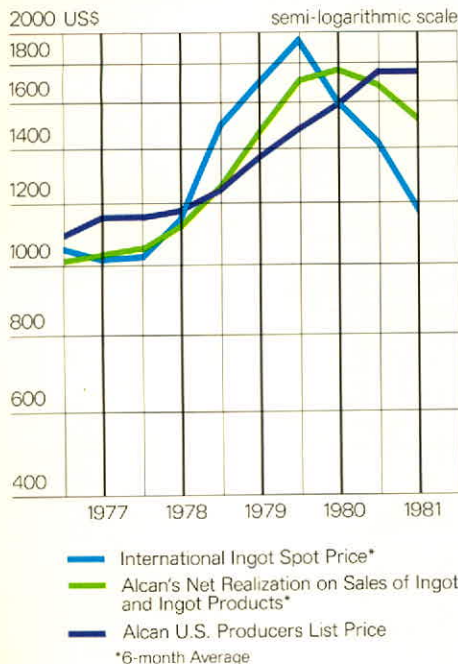
It was in this context that Alcan placed in abeyance in August plans for a 'greenfield' export smelter at Bundaberg, Australia. However, Alcan believes that Australia remains a prime location for aluminum facilities and is confident that the Australian smelter ultimately will be constructed.

The 1982 capital spending program calls for sizeable expenditures, primarily in North America, Brazil and Australia. Alcan has invested heavily in the past 20 years in its international fabricating base, which has proved increasingly profitable, and furthermore accounts for about two-thirds of Alcan's total sales volume. Alcan's goal is to have fabricating operations account for about 75% of sales in order to strengthen the dependable demand on its smelter system, while still retaining a sizeable quantity of aluminum ingot for sale to third parties.

Looking further ahead, Alcan is continuing its commitment to seek out and identify attractive opportunities in Canada and elsewhere for expanding its smelter capabilities. To this end, Alcan is continuing to study the possibility of expanding smelter production in British Columbia, based on completion of the Kemano Power project. The company remains confident that in cooperation with interested parties, including the residents, environmentalists and the various levels of government, a solution can be arrived at that will permit completion of the hydroelectric power project.

In Manitoba, Alcan is conducting a feasibility study that could lead to an investment in a 200,000 tonne-a-year aluminum smelter and related hydroelectric generating facilities. A decision on whether to proceed with the smelter will be influenced by many factors, including Alcan's financial performance, the world outlook for the aluminum industry and satisfactory negotiations with the Manitoba government.

Trends in Aluminum Prices



Research and Development

Based on the continuing recognition that research and development is a vital element in the high-technology business of producing aluminum and its many products, Alcan spent a record \$48 million in this field in 1981.

Alcan's research is motivated principally by the need to reduce energy consumption, to improve environmental performance and to develop large-scale product uses for aluminum in several fields such as packaging and transportation. Moreover, major new emphasis is now being given to the vital steps of design and demonstration, which are essential to the successful transfer of laboratory innovation to commercial application.

President's Message

Employees

With minor exceptions Alcan experienced satisfactory employee relations at its major operations in 1981. Collective union agreements were successfully concluded at locations in Canada and elsewhere. A new 30-month contract was agreed with the union at the Kitimat, B.C. smelter, making pay scales competitive with other industries in the region. An agreement was renegotiated for an additional 16 months until December 1983 with workers at the Shawinigan, Quebec, smelter, at terms similar to those reached last February with employees at Alcan's three other Quebec smelters.

Negotiations with Jamaican bauxite and alumina production workers continued throughout the year without reaching an agreement. There were no disruptions in production during 1981. However, in late January 1982, workers at the Kirkvine and Ewarton alumina plants walked off the job, necessitating management to begin an orderly shutdown of the plant.

During the year, Alcan established, in cooperation with Canadian employee representatives, a number of joint committees to examine long-term issues of mutual importance such as productivity improvements, modern work organization, worker benefits and health and safety.

The harmonious relations of the past two years are, Alcan believes, evidence of the renewed emphasis the company is placing on developing sound labor practices both for the near and the long term.

In April, J. Hugh Faulkner was appointed to the post of Vice President, Environment, Occupational Health and Safety. The establishment of this department at the international head office level reflects the increasing attention that Alcan believes necessary in these areas, in which we have a responsibility to both our employees and the community.

Among the initial tasks of this new department during 1981 was to help strengthen the field organization to ensure more effective management of environment, occupational health and safety issues and encourage the further development of procedures for monitoring Alcan's performance.

Management Changes

To meet the challenges that lie ahead for a growing and increasingly complex international business, Alcan has made important changes in its management organization, including the creation of the Office of the President.

Effective 1 January 1982, John H. Hale, Eric A. Trigg and Eric F. West have been appointed Senior Vice Presidents and join me to form the Office of the President, which will bring to deliberations of management and the Board a comprehensive view of Alcan's interests and activities around the world.

Messrs. Hale, Trigg and West have relinquished their specific line responsibilities as Executive Vice Presidents, thus bringing their extensive experience to bear on global and strategic aspects of the company's operations, while allowing the Vice Presidents in the field greater scope to manage operations in their respective geographic areas. Mr. Hale also retains his position as Alcan's Chief Financial Officer.

Patrick J.J. Rich, formerly an Executive Vice President, has, at his own request, given up his executive responsibilities in Montreal and is not standing for re-election as a director at the Annual Meeting. He will take up the post of Vice President, Europe, in July this year.

David Morton has succeeded Mr. Rich as Vice President, North America and Caribbean and President and Chief Executive Officer of Aluminum Company of Canada, Limited. Other appointments include Gerald Clark as Vice President, Latin America, succeeding A.F. Black, who in mid-1982 will take up the position of Vice President, South Pacific, replacing John B. Clarkson, who has agreed to become non-executive Chairman of Alcan Australia Limited. Ihor Suchoversky will move to Montreal this year from his position as Vice President, Europe, to become in July Vice President, Research and Operations Technology.

The international scope of Alcan's business places special emphasis on the need to develop and expand our international management capabilities. One aspect of this is featured in this year's report in the section which deals with the International Management Program (I.M.P.) course held last year in Canada and Brazil.

Outlook

The severity of the downturn on market demand, delayed as it was in North America until the latter part of 1981, is part of a broader picture of a widespread recession, affecting manufacturing industries in most industrialized countries. The priority being given by many governments to fighting inflation has brought about monetary policies that discourage both consumer demand and capital investment. We must accept these as necessary, though painful, steps to recovery. For the aluminum industry, the revival in demand, when it comes, is likely to be relatively strong, as high interest rates have depressed customer inventories to minimum levels. The benefits of the recovery will be felt first in a reduction in the industry's surplus inventories, followed by an increase in price and subsequently an increase in smelter operating rates.

Alcan's strategic thrust demands a greater emphasis on marketing, consumer products and innovation to complement its strong base in primary aluminum and semi-fabricating operations. I believe that we have three fundamental strengths that support this strategy—the qualities of the metal itself, the international scale of our activities and our strong cost-effective energy base.

Aluminum, as a metal, has a unique combination of properties—lightness, corrosion resistance, thermal and electrical conductivity—which ensures it a functional place in any growth scenario. It is this functional attractiveness which underlies its past and future growth.

Secondly, the international scale of operations spreads our risks and diversifies our opportunities. Technology and market know-how can be readily transferred within the group from one country to another. Group exposure to national economic and currency fluctuations is minimized in the long-term by our geographical spread. While currently the major part of our earnings flows from North America, this may become less so in the future. Growth rates are likely to become higher in the developing countries and we are well placed to take profitable advantage of that growth.

Thirdly, our energy base, largely hydroelectric—gives us the staying power to withstand, better than many companies, the impacts of the business cycle and of energy shortages.

Today's inventory burden is tomorrow's source of relatively low-cost metal. We are organizing ourselves to handle the gap between today and tomorrow with a minimum loss of momentum, and without compromising our long-term strategic thrust.



Montreal, Canada
4 February 1982

David M. Culver
President and
Chief Executive Officer

"One of Alcan's great strengths is the people of all nationalities we have spread all over the world. Wherever a new opportunity arises, we usually find we have people there, or who have worked there. Our International Management Program is a key component helping us to maintain and enhance this important competitive advantage in a global industry."

*— David M. Culver,
President and Chief Executive Officer*



International management is nothing new to Alcan. By its very nature, the aluminum industry tends to take on an international character. Much of the world's bauxite is found in places remote from both the large and economic energy sources needed for smelting and from the world's major markets for finished products. Consequently, the practice of mining bauxite in one place, refining and smelting it in another, and fabricating and marketing finished products in yet another is a common one. Alcan's early development as a global company followed this basic pattern.

But Alcan has always regarded multinationalism as a special opportunity, rather than just a necessary fact of life. Programs to develop and expand international management capabilities have been a part of Alcan for many years.

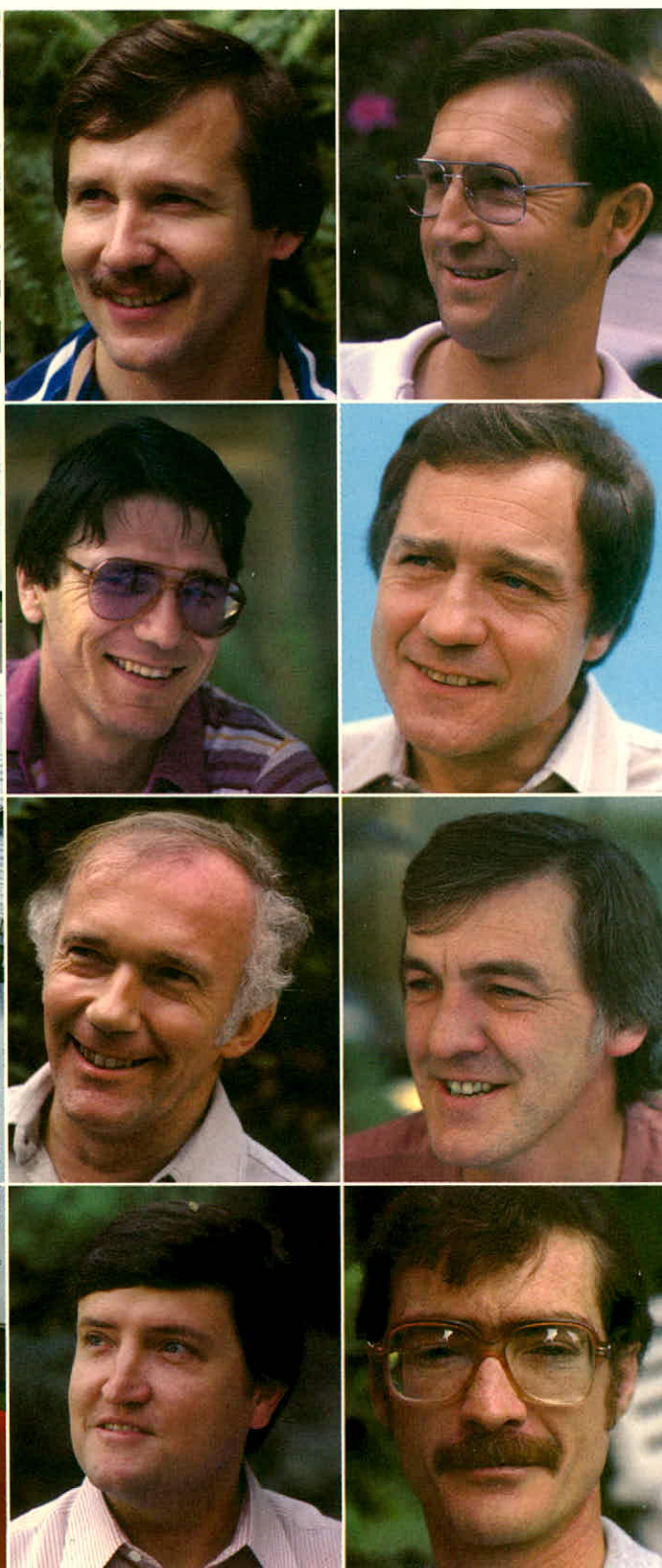
In 1946, Alcan established the Centre d'Etudes Industrielles (C.E.I.) in Geneva, Switzerland to meet this need. Alcan continues to support the school, now an independent institution known as the International Management Institute (I.M.I.).

The formal statement, "Alcan, Its Purpose, Objectives and Policies" published in 1978, reiterated the long-standing corporate commitment to executive development by stating that one of Alcan's objectives is "to maintain an organization of able and committed individuals in the many countries in which we operate and to provide opportunities for growth and advancement both nationally and internationally."

Alcan's International Management Program (I.M.P.) was developed in 1979 to give a further special emphasis to the international aspect of the overall corporate effort in succession planning and executive development. Drawing on experience with C.E.I. as well as reviews of similar programs in other major global corporations, a three-week course of lectures, case studies, workshops and group discussions was assembled.

About 30 executives from the various Alcan companies are selected to participate each year. They gather for an initial two-week session near Montreal. A final week's session takes place four to five months later, at a location outside Canada that changes each year. The different venues add an extra dimension to discussions of issues





related to particular regions. In 1980, the site was Geneva (taking advantage of C.E.I. facilities and faculty), and the spotlight was on European strategies. In 1981, it was São Paulo, with the focus on Latin American issues. The next session will be in Kuala Lumpur, and the emphasis will be on strategies for developing countries.

Visiting faculty for the program is drawn from some of the world's leading business schools, including Harvard, Wharton, McGill and INSEAD. A number of Alcan's senior executives also participate, presenting case histories and leading discussions.

The program is by no means a leisurely mini-sabbatical; most participants find themselves working long hours preparing for all-day sessions. The broad objective is to increase participants' knowledge and understanding of Alcan's international operations and the way they are managed in different environments. Among the topics treated are such things as the management of multinational consortia, joint affiliations, cultural diversity, strategic planning and the balancing of private and professional lives.

The mix of participants indicates just how global Alcan has become. The 1981 group had members from no less than 14 different countries.

Perhaps the best way to assess the value of the program — both to Alcan and to the individuals involved — is to view it through the eyes of the participants. On the next eight pages, a selection of members of the 1981 group is profiled. Their careers, and their comments, provide the ultimate measure of Alcan's commitment to international management.

Among participants and faculty in the 1981 International Management Program were (left to right, top to bottom): J.A. Horstmeyer, B. Hill, G.A. Little, N.E. Rouse, C.R. Tambllyn, J. Terol, J.P. Beaulieu, R.A. Salette, F. Ameye, E. Russell, I.W. Porteous, R.J. Maheu, C. Coccia, R.M. Knight, P.C. Ortleb, C. Allard.



Bob Landecker comes about as close as anyone can to being typical of this year's extremely diverse I.M.P. group. Like most of them, he is multi-lingual. Like many of them, he left his homeland as a young man to see the world, and like all of them, he has made progressive moves ever since. He has also taken some unexpected turns along the way.

Growing up in Capetown, Bob developed an early fascination with the world beyond his home on the tip of the African continent. "Geography was always my favourite subject at school," he notes. "and I wanted to see the world in person—especially the U.S.A. and the culture of Europe that was lacking in South Africa."

It was this urge that caused him to set out as a young chartered accountant to take a job in England. Two years later, he was in Montreal, and a year after that, he was taking an M.B.A. course at Columbia University in New York.

Back in Capetown as a partner in an auditing firm, he met his wife-to-be, who came from Brazil. They were married in her native São Paulo, and a year later, they moved to that city, Mrs. Landecker to practise law, and Bob to take a new

"Geography was always my favourite subject at school."

*— Robert N. Landecker,
São Paulo, Brazil*

position with an accounting firm. A few years later, Bob joined Alcan Alumínio do Brasil S.A. as corporate controller. He has since been appointed Assistant to the Vice-President, Finance of that company and for three months in 1980, acted as Chief Financial Officer of Alumínio Alcan de Colombia, S.A.

In the course of his travels, Bob has added German, Spanish and Portuguese to his native English and Afrikaans. His wife is equally polyglot, speaking six languages. The advantages of such internationalism are obvious—opportunities become global rather than merely local. But there is also a need to cultivate roots, as the Landeckers, who have a son and daughter, realize.

"I appreciate the way Alcan considered the personal side of our careers as well as international management in the I.M.P. course," comments Bob. "People who move around a lot need to feel that they belong somewhere, to have a sense of who they are."



A legacy of Brazil's early gold mining days, Ouro Preto's superb 17th Century Portuguese architecture has been lovingly preserved. Today, aluminum produced at Alcan's nearby Saramenha complex has replaced gold as the economic mainstay of this historic community.



Planning and managing the distribution of aluminum products such as these large coils of sheet is one of John Bridgeman's responsibilities in the U.K. area.



 John Bridgeman has good reason to associate himself with the whole North Atlantic region as much as he does with his domestic base in the U.K. Though his home is near Lynemouth, he can also be found in Montreal, Bermuda, Geneva, Frankfurt or London at frequent intervals through the year. In mid-November last year, on a flight from London to Montreal, John logged his one-millionth air mile since 1972, including 32 Atlantic crossings.

Welsh born and educated, John joined Alcan at Banbury, England, in 1966. Three years later, he was transferred to Canada and spent two years as a process engineer in Jonquière, Quebec. Then he moved on to Australia's Kurri Kurri smelter.

Back in the U.K. in the early 1970's, he worked on the start-up of Lynemouth Works. Once operations were underway, he became involved in the transfer of trading and metal management functions from London to Lynemouth—and developed a taste for international business.

Today he is a Division Manager of Alcan Aluminium (U.K.) Limited, responsible for a number of Alcan subsidiaries involved in distribution, end-product manufacturing and secondary alloys. He is also a Vice President (Europe) of Alcan Basic Raw Materials Limited, acting as its "eyes and ears" in the European markets.

"I'm more group-oriented than U.K.-oriented"

*— John S. Bridgeman,
Lynemouth, England*

Alcan Basic Raw Materials Limited, acting as its "eyes and ears" in the European markets.

John, like most frequent travellers, has learned how to blend travel with family life. Whenever possible, he organizes his schedule so that he spends only one night away during a two-day business trip.

"If you want your family to support your career, you have to return that support when you're home," he advises.

John sees the building up of a network of international contacts as a key benefit of the I.M.P. course. "It's so much easier to deal with people you've met rather than just names and voices on the telephone." Over the long term, he feels the program will provide Alcan with "a matrix of interconnected compartments that can cross-fertilize and cross-consult to everyone's advantage."

*Bob Landecker (left) and John Bridgeman
outside the Paulista Museum, Ipiranga,
São Paulo.*



Shashi Prasad has spent virtually all his working life in his native India. At first glance this might seem to be the opposite of an international career. But India is a country like no other; as Mr. Prasad puts it: "The east and the west of India are as different as Scandinavia and Spain."

Shashi describes himself as "a product of transition" with roots in both colonial India and today's independent state. He attended British-style high schools in his native Bihar, graduating in 1952, but by the time he returned home with an M.S. (Chem. Eng.) degree from the University of Detroit in the 1960's, the *raj* had passed into history, and India was changing rapidly.

Six-month training periods in Canada and Jamaica preceded his assignment as a research and development process engineer at Indian Aluminium Company, Limited's Muri Works, Bihar, in 1963. Today, he is back in Muri—as Works Manager, responsible for a complex that includes a bauxite mine, an alumina refinery and a power station.

Between his early days at Muri and his current position, Shashi spent seven

"The east and the west of India are as different as Scandinavia and Spain."

— Shashi S. Prasad,
Muri, India

years in western India at Belgaum, (interrupted by a year in Geneva at C.E.I.), then became Mines Manager at Chandgad before returning to Muri.

A legacy of Shashi's transitional background is the fact that, although he speaks Hindi, his home language is English. And English has been the vital "link language" that has enabled him to live and work in places with local languages as different as Marathi, Bengali and Kannada.

I.M.P. discussions provided Shashi with valuable insights into both Alcan's operations and the attitudes and concerns of Alcan people in different cultures.

Noting the concern of western managers for balancing their private and professional lives, he remarked: "In India, this was always the way. Only recently has the neglect of family for career begun to emerge." But not in the Prasad family. His view on this point is clear: "The family is a complete entity which is complementary to work and there is very little competition between the two."

हिन्दी भाषा भारतीय भाषाओं में से एक है

ಕನ್ನಡ ಭಾರತದ ಭಾಷೆಗಳಲ್ಲೊಂದು

मराठी ही भारनांतील एक भाषा आहे.

ভাষীরা ভাষাগুলির প্রাচীন মূল্য অনুধাবন করে।

"Hindi is one of the languages of India", says the top line at left. The next three lines say the same thing in three other languages, Kannada, Marathi and Bengali. Unlike most European languages, which at least share a common alphabet, these Indian tongues are as different in print as they are in speech. As a result, moves within India can involve as much cultural readjustment as moves from one country to another elsewhere in the world.



Fred Durdan is responsible for the Oswego, New York Works, Alcan's largest U.S. fabricating facility, which employs more than 1,000 workers and produces over 450,000 tonnes a year of hot and cold rolled sheet and plate for the automotive, beverage container, building and consumer durable markets.



 In some parts of the world, a career like Fred Durdan's would have landed him in at least four different language and cultural environments. But thanks to the homogeneity of North America, only one of Fred's moves involved a cultural adjustment—but it was a major one.

Born and educated in Ontario, Canada, Fred joined Alcan in 1961 and was promptly sent 2,500 miles to Kitimat, British Columbia, where he spent most of the next five years. Then he moved 1,500 miles down to Riverside, California, followed ten years later by a short hop to Los Angeles.

At this point, Fred, his wife and children were very much adapted to the California life style. But they soon discovered that not all moves are as easily made as those within North America; Fred accepted an appointment in Kaduna, Nigeria.

Wisely, he prepared both himself and his family for the experience. "We did a fair amount of research before going—meeting Nigerians or people who had lived there." They brought the children

"It was impressive to have actual participants present case histories—including their mistakes!"

— Fred J. Durdan, Oswego, N.Y., U.S.A.

with them for the first six months, then sent them back to boarding school in Canada. It was an enjoyable and educational experience for all concerned, Fred reports.

Fred returned to the U.S. in 1979 to become Works Manager of Alcan's largest fabrication plant at Oswego, New York. In February this year, he was appointed Vice President and General Manager of the Rolled Products Division of Alcan Canada Products Limited, based in Toronto.

He found the I.M.P. an ideal supplement to more academic types of management training because the subject matter is tailor-made to Alcan executives' needs—including frank discussions of problems and mistakes.

Fred also feels the I.M.P. experience should be a definite help to others who go through the culture shock of a major international move.



Shashi Prasad (left) and Fred Durdan in the Praça da Liberdade street market in the heart of São Paulo.

 Shigesato Sato's career successfully combines some of the paradoxical extremes of international business. On the one hand, he has always been based in his native Japan and in the traditional manner, has devoted his entire career to a single company, Nippon Light Metal Company, Ltd. On the other hand, he has done a great deal of international travelling, acting as one of his company's principal links with the outside world.

Sato's experiences have shown him that the world can be a very large place, with an inexhaustible store of new experiences to offer. But sometimes, it can also seem very small, as paths cross and re-cross in surprising ways within the international business community.

Sato joined the legal section of Nippon Light Metal on graduation from the University of Tokyo. As the company began expanding its foreign contacts to acquire new technology, he became involved in negotiating various technical agreements with other companies in Europe and North America. A year at

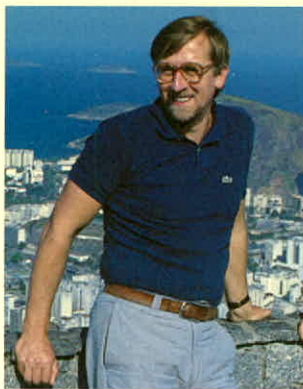
"It's important to understand the autonomy of the western manager versus the Japanese consensus system."

— Shigesato S. Sato,
Tokyo, Japan

C.E.I. in the late 1960's greatly improved his command of English, as well as allowing him to learn some French and German (which he had studied at university).

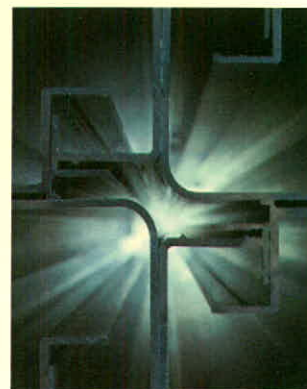
Throughout the early 1970's, his negotiating activities took him on extended trips three or four times a year to such places as Canada, the U.S.A. and Brazil. More recently, his travel schedule has been reduced as he has assumed the position of Manager, Finance Section, with prime responsibility for fund-raising on the Japanese market. But he has by no means shifted to a stay-at-home mentality. On the contrary, he values his international travel opportunities more than ever because they provide him with a broad perspective on Alcan that is impossible to obtain inside Japan.

"If Nippon Light Metal becomes more and more integrated into Alcan's world-wide structure, knowing outside people becomes more and more important," he explains. "We have to see beyond the Japanese context, and acquire an understanding of other cultures and management styles—such as the autonomy of western managers compared to the Japanese consensus system that seeks to avoid confrontations"



In 1967, Shigesato Sato visited Norf, West Germany, and met a man named Hans Endler. Nearly 15 years later, looking over the list of I.M.P. participants, the name Endler rang a bell. Was it the same Hans? Yes it was! Now with Alcan in Göttingen, Hans was equally surprised and delighted to renew an old friendship.

Some of the many shapes extruded in Japan from Nippon Light Metal Company aluminum.



Intercontinental jetliners play a vital role in linking Australia with the industrial economies of the Northern hemisphere. Eighteen-hour trans-Pacific flights may seem long by most standards, but they are a far cry from the months at sea it used to take to travel 'down under'.



 Tony Earley succumbed to the urge to travel earlier than most. And because his starting point was Australia, he travelled farther than most. In fact, he circled the globe, and did it the hard way, camping, hitch-hiking and odd-jobbing his way from one continent to another.

Tony was born in England, but his family moved to Australia while he was still a child in 1951. He joined Alcan in 1958 as a lab assistant and completed a four-year part-time metallurgy course at the Sydney Institute of Technology. But like Bob Landecker, Tony also wanted to see the world. So he set out on a two-year voyage of exploration.

Returning to Sydney in 1964, he rejoined Alcan and progressed from Production Superintendent to Division Manager, Building Products, a position that still affords him an opportunity to travel.

Any trip outside Australia is a long trip, and Tony is accustomed to the arduous haul when he is required to visit various U.S. cities. He usually makes extended visits, doing as much business as possible between each pair of monumental jet-lags. Neither Tony nor his wife is hankering to leave Australia

"The energy input from the group was phenomenal."

*—Anthony Earley,
Girraween, Australia*

—at least, not to move anywhere else in the English-speaking world.

"If I were to make an international move," says Tony, "I would prefer a completely different culture, to make the experience worthwhile."

Tony considered the openness of the case history approach "the most surprising and exciting thing of all" about the I.M.P. course. "I was both surprised and pleased by the frankness of the discussions," he said.

He also enjoyed the opportunity to meet and work with Alcan executives from other countries. "The energy input was phenomenal."

In fact, the personal chemistry in the group—the sense of a shared mission—was a lesson in itself for Tony, as it was for many others. "Whoever selected our particular group would do well to remember to repeat the formula for future years."

Shigesato Sato (left) and Tony Earley enjoy the view on a country estate outside São Paulo.



Hans Buchholt is another example of early wanderlust. Born and educated in Northern Germany, he began his working career with a local trading company. But after completing his compulsory naval service, he decided on a change, and contracted with a German import-export firm to act as their agent in Liberia.

"I always liked languages, and I wanted to work somewhere outside Germany," he explains. He had already added English and French (both needed for the job) to his native German.

After completing the African contract, Hans returned to Germany to study for a Business Administration degree at the Bremen Business School.

When he graduated in 1975, Hans joined Alcan Aluminiumwerke GmbH in Göttingen. His daily routine in this quiet university town is pleasant enough; when he is in town he often comes home for lunch to see his wife and young son. The acknowledged travel leader of this year's I.M.P. group, Hans crisscrosses Europe on a regular basis with occasional extended trips across the Atlantic.

"Worldwide, I feel we're not only equal but superior to most other global companies."

*— Hans-Werner Buchholt,
Göttingen, West Germany*

He tackles the language and cultural differences of Europe with gregarious enthusiasm, making full use of his fluency in three languages and his steadily improving command of two more.

His skills and his job are well matched; as Product Manager, Packaging, Hans is responsible for supplying aluminum sheet to the booming beverage can market throughout the European Economic Community.

Learning first-hand about Alcan's international operations made a strong impression on Hans.

"I feel even more confident about Alcan now," he says. "On a worldwide basis, I realize we are not only equal but superior to most other global companies."

Hans also learned some useful lessons about coping with his heavy travel schedule. "It made me see that even if I travel less in the future, I need an action plan for my family life, just as I do for my business life."



The growing popularity of aluminum cans in the European brewing industry keeps Hans Buchholt busy supplying customers throughout the E.E.C.





Until his recent move to the Far East, this typical Arvida house was home to Gaston Ouellet and his family. Now the Ouellets are adjusting to life in Kuala Lumpur, where architecture like the mosque at right is just one of many drastic cultural differences.



Gaston Ouellet is a man who asked for an inch and was given a mile — 20,000 miles, to be exact.

Born and raised in Jonquière, Quebec, Gaston began working summers for Alcan while taking his degree in Industrial Relations at a Quebec university. On graduation, a full time job with Alcan Smelters and Chemicals Limited as a Training Counsellor seemed a natural progression.

For the next dozen years, a series of personnel jobs kept Gaston at home in Jonquière, or nearby in Shawinigan. The one exception was a year's course at C.E.I. in 1973-74 — and it was a crucial exception. Exposure to the European environment of Geneva planted a new idea: the possibility of an international assignment.

Gaston's wife and three children liked the idea, so he broached the subject with his superiors. The company's response was also positive, perhaps a little more than expected — Gaston was offered a post halfway around the world in Hong Kong.

He accepted, and in much the same manner as Fred Durdan, began to prepare himself and his family for the move.

"It was the year at C.E.I. in Geneva that planted the seed."

*— Gaston Ouellet,
Kuala Lumpur, Malaysia*

The preparations stood them in good stead; they found the transition to Hong Kong easier than expected. Despite a drastic change of cultural environment, they found the shock eased by the presence of a large, open and mutually-supportive international community.

Among Gaston's new responsibilities was that of locating candidates for the job of Sheet Business Centre Manager in Malaysia. To his surprise, Gaston himself was offered the job. It was an irresistible idea because it afforded a chance to realize one of Gaston's basic career ambitions, that of moving from a staff to a line function. So, the Ouellets were once more transplanted, this time to Kuala Lumpur.

"I guess I got what I asked for," notes Gaston, "but a lot more of it than I expected."

Gaston views the I.M.P. course as a vital element in Alcan's global strategy. "We have to prepare people for both the opportunities and the hazards of international careers. The question of personnel transfer is not simple," he says.



Hans Buchholtz (left) and Gaston Ouellet atop Rio's famed Sugarloaf.

Canada Smelting



Alcan's Canadian smelters produced 962,100 tonnes of primary aluminum in 1981, (918,400 tonnes in 1980) including 45,400 tonnes toll-smelted in each year for an associated company in Japan, but not included in consolidated sales. This surpassed the company's planned production and was accomplished because of continuing high efficiencies and stable operations at all Canadian smelters.

Total sales of aluminum and chemical products to Alcan group companies and third parties by Alcan Smelters and Chemicals Limited produced revenues of \$1.3 billion.

In light of soft world market conditions for aluminum, Alcan Smelters and Chemicals announced in October a delay in the start-up of the second 57,000 tonne-a-year potline at the Grande Baie, Quebec, smelter, and that one-half of a potline, representing 20,000 tonnes, at Kitimat, British Columbia would be closed down 1 November. These decisions reduced Alcan's Canadian annual smelting operating rate to 941,000 tonnes, or 92% of the rated capacity of 1,018,000 tonnes at year end. Construction is continuing on the third 57,000 tonne-a-year potline at Grande Baie, which will bring capacity at that smelter to 171,000 tonnes a year in 1983.

Capital expenditure programs, aimed at expanding and modernizing facilities, and improving energy efficiency and environmental controls, continued at all locations at a cost of \$358 million.

In Jonquière, Quebec, the second phase of a program for a new direct chill ingot casting centre and ingot heat treatment facility was completed providing additional casting capacity.

The modernization program at the Vaudreuil chemical complex at Jonquière continued, including work on installing three energy-efficient fluid flash alumina calciners which will reduce oil consumption by 230,000 barrels a year when completed. The three calciners will replace ten rotary kilns in use since the early 1940's at the 1,225,000 tonne-per-year alumina facility. Work also proceeded on precipitation circuits to improve productivity and product quality.

Installation of a new carbon paste plant, at Kitimat, B.C. is proceeding towards a scheduled start-up in late 1983. This project is part of the program to modernize Kitimat Works, including the use of new smelting technology, which improves working conditions and energy efficiency.

During the year, Aluminum Company of Canada, Limited and the Government of Manitoba signed a letter of intent to conduct a feasibility study for an aluminum smelter in that province. The study is continuing and could lead to the company investing in a 200,000 tonne-a-year aluminum smelter and related hydroelectric generating facilities, if and when market conditions warrant. As part of this study, the company announced in September it had chosen a 50-square kilometre area, about 45 km north of Winnipeg, as the preferred location for the smelter.

North American Fabricating System



Anticipating the recession that depressed most aluminum markets at mid-year Alcan's North American fabricating system was able to avert much of the severe impact. The fabricating system's sales revenue over the first nine months surpassed the record-breaking results of the same period of 1980. However, the dramatic slow-down of the fourth quarter offset most of those achievements, resulting in only a slight gain in revenue for the year.

The program to integrate the management of fabricating operations in Canada and the U.S., begun in 1980, also helped the system cushion the recession's effects, through more effective use of joint facilities, research and development, capital and personnel.

Canada

Alcan Canada Products Limited, which produces semi-fabricated and finished products at 28 plants across Canada, had sales revenues of \$744 million in 1981, up 5% from 1980. However, in the face of deteriorating economic conditions in Canadian markets, net income declined from a year earlier. Total domestic shipments to Alcan group companies and third parties were 225,000 tonnes, (including 47,000 tonnes of ingot products), little changed from 1980. In addition, 21,000 tonnes of fabricated products were exported to other Alcan companies and third parties.

Weakening economic conditions in Canada became apparent in the second quarter and from the end of the third quarter an accelerated downtrend was evident. Sales of aluminum held up reasonably well for the first nine months, but fell sharply in the fourth quarter, reflecting the economic performance in the country as a whole. Total aluminum demand in Canada was somewhat lower than in 1980.

Demand for wire and cable remained strong, as various provincial governments' emphasis on development of electrical energy to replace oil continued. The company's new rod mill in Vancouver, British Columbia, came on stream near year end and an \$18 million expansion of the wire and cable plant at Shawinigan, Quebec, was approved. The Wire and Cable Division installed new equipment at Shawinigan to increase its ability to produce aluminum strip for the armored cable market.

In Jonquière, Québec, experimental work continued on expanding the product range available from the high-volume continuous casting process for re-roll stock, and work was completed on the installation of the new Alcan-designed continuous-casting machine capable of widths up to 215 cm.

Development work was completed on a new product—reflectorized sheet—and the first commercial order was obtained from the Government of Quebec for the manufacture of license plates.

Alcan Canada Products has acquired the rights, patents and equipment for a new forge-welding process named ALFORGE®. By year's end it had installed the machinery in Kingston, Ontario, where it is developing new applications in the manufacture of stiffened aluminum panels from extrusions, mainly for use in the transportation field.

Sales to the building industry had a difficult year. High interest rates brought new residential construction almost to a standstill late in the year.

Foil operations faced a highly competitive year in all product lines, partly due to continued concern over packaging costs, and the return of a major competitor following a lengthy strike in 1980. Growing interest in the flexible foil retortable pouch, and the development of a new and stronger foilstock alloy, are developments that hold promise of future growth.

Ingot sales had a relatively slow year, largely as a result of the pronounced downturn in the automotive and building industries. But there was steady, slow growth in casting alloy sales, with a number of important foundries switching to primary alloy, after a period of experimenting with secondary material.

North American Fabricating System



United States

Alcan Aluminum Corporation posted a small drop in shipments but net income declined sharply, reflecting the economic malaise that afflicted most markets in the closing months.

Revenues fell slightly to \$1.4 billion, and shipments in all forms were 486,500 tonnes (including 109,300 tonnes of ingot products), 5% less than the 1980 record-breaking results.

The Alcan Sheet and Plate Division posted a 10% gain in shipments while revenues rose 18% and profits increased on robust activity in several markets, particularly beverage containers. Sales in the automotive and building sheet markets were strong through most of the year, in contrast to the rest of the U.S. aluminum industry's experience. The fourth quarter, however, was marked by slowdowns in the auto and consumer durable segments, which could well continue in the early months of 1982.

Construction is proceeding on the \$50 million modernization and expansion of cold and hot rolling capacities at the Oswego, New York, Works. A \$32 million plan to install a heat-treat line at Oswego, however, has been postponed for at least two years due to lowered demand projections in the automotive market.

The business picture for wire and cable was mixed in 1981. Demand from the electrical utilities was poor while building wire markets, which were strong through the first half, became sluggish in the second half. The cable division introduced its proprietary ALHIDE® coated insulation and expanded its STABILOY® building wire product line with the addition of four new sizes.

Sales by the Alcan Ingot and Powders Division also presented a mixed picture. Ingot sales were harshly affected by weak demand and declining prices. Demand for secondary foundry ingot was slack due to the weakening auto market, but the powders business, particularly spherical aluminum powder for the U.S. defence program, was generally strong. The division opened its new powder plant and secondary smelter expansion in Joliet, Illinois in June. The powder facility can produce up to 12,000 tonnes of aluminum powder, paste and flake, while capacity of the secondary smelter has been expanded to 30,000 tonnes.

After a record 1980, the Metal Goods Division posted a flat performance. It will open its 25th service center in early 1982, reinforcing its position as the largest distributor of corrosion-resistant metals in the U.S.

Sales of building products were generally depressed for most of the year, reflecting slowed housing starts and high interest rates. Sales of commercial and industrial products were basically strong. Recovery in the building and residential markets will not occur until interest rates slacken.

Jamaica



International demand for alumina was lower in 1981, reflecting reduced smelter operating rates in the aluminum industry. Jamalcan (the joint venture association of the Jamaican government, 7%, and Alcan, 93%) had a good year despite two 30,000-tonne cutbacks in production as a result of the soft aluminum market. Production was 1,043,000 tonnes of alumina, or 95% of capacity, while shipments were 1,035,000 tonnes, mostly to other Alcan group companies.

Negotiations continued all year under auspices of the Ministry of Labor between the National Workers' Union and the various bauxite and alumina producers in Jamaica on new collective agreements to replace those that expired in January 1981. No agreement was reached between Jamalcan and the union, but there was no disruption of production in 1981.

Latin America



The rate of economic growth slowed noticeably throughout Latin America in 1981, with Brazil and Argentina experiencing downturns in Gross National Product.

Net income for the Area, including consolidated subsidiaries and equity-accounted companies, fell to \$24 million from \$63 million in 1980.

Strong Brazilian government measures to cool down the economy and reduce inflation from the over 100% level in 1980 met with some success, but had an adverse impact on demand for aluminum. This, combined with intense competition, rising energy costs and increased financing costs, resulted in sharply lower earnings for Alcan Alumínio do Brasil S.A. as shipments fell 16% to 83,000 tonnes.

The near-term outlook is for some improvement in Brazilian earnings and the longer term prospects remain promising. Reflecting Alcan's continuing confidence, capital expenditures in Brazil increased to \$120 million from \$58 million in 1980. The higher spending was due mainly to the 30,000 tonne expansion of the Aratú smelter scheduled to be completed at the end of 1982. The construction schedule for a \$150 million hot mill to be built at the Pindamonhangaba sheet rolling complex has been stretched out due to reduced demand in the Brazilian market.

Capital expenditures included the purchase of additional equity in Mineração Rio do Norte, the Trombetas bauxite mining project in the Amazon region, bringing Alcan's interest to 24% from 19%. Operations at the mine continued to show improvement with total shipments reaching 3.3 million tonnes, of which Alcan received 1.6 million tonnes for its Quebec alumina plants. Studies are continuing to determine the timing for future expansion of the Trombetas mine. A new pollution-free ferro-alloy plant some 15 km from Ouro Preto started operation during the year.

Mexico achieved the highest economic growth rate in Latin America and continues to offer excellent long-term potential. Alcan Aluminio, S.A., in which Alcan owns 49%, moved to consolidate its prime position in the Mexican market by acquiring a prominent sheet and foil producer. It began a \$32 million expansion and modernization of its Tlaxiaco sheet and foil rolling facilities.

Camea S.A., an Argentinian fabricator owned by Alcan, experienced another difficult year as a result of soaring inflation and poor economic conditions. Camea registered a loss on operations, but some improvement was noted towards the end of the year. Operations in Uruguay continued to show satisfactory results.

Europe



The major economies in Europe remained in recession throughout 1981. Industrial production, which had fallen sharply in 1980, was relatively stable during the year at a level some 6% below the peak of 1979.

This depressed level of industry activity, accompanied by vigorous destocking by customers early in the year, resulted in reduced demand for ingot and semi-fabricated products, and prices were under pressure all year.

These factors, together with rapidly changing exchange rates, combined to create very difficult conditions for Alcan's operations in Europe. Losses were particularly heavy in the United Kingdom and in Spain where the operations of Empresa Nacional del Aluminio, S.A. (Endasa 42.7%-owned by Alcan) and its subsidiaries were adversely affected by high financial and energy costs, low world ingot prices and depressed domestic markets.

Alcan's consolidated shipments in the European area were 462,900 tonnes, down from 476,100 tonnes in 1980 and produced revenues of \$1.4 billion, down 17% from a year earlier, reflecting the strengthening of the U.S. dollar against local currencies.

European operations resulted in a loss of \$71 million in 1981 compared with profits of \$21 million in 1980, including Alcan's share of losses of equity companies of \$29 million in 1981 and \$2 million in 1980. About one-third of the total 1981 losses can be attributed to currency translation.

Total capital expenditures on fixed assets and investments were \$236 million in 1981.

Despite poor results in the U.K., expenditures necessary to modernize and upgrade facilities were maintained and included a major expansion of the plate production facility at Kitts Green which is scheduled for completion in early 1982. This project includes installation of a horizontal furnace for the heat treatment of aluminum plate for use in aircraft and armored vehicles.

Early in 1981, Alcan successfully completed an exchange of Alcan shares valued at \$26 million for the 22% minority shareholding in Alcan Aluminium (U.K.) Limited. The offer was made in the belief that the future development of the British subsidiary could be better assured as a wholly-owned member of the Alcan group.

Alcan moved to strengthen its position in the European foil market with the acquisition at the end of the year of a leading foil container and flexible tubing manufacturer in Germany with annual revenues of \$65 million. Work continued on expanding the casting plant at Nürnberg, Germany, which will permit increased participation in the European market for high technology castings.

In Italy, where Alcan's business is now consolidated in Alcan Alluminio S.p.A., work continued to improve sheet finishing operations at Bresso. A new extrusion press will come on stream early in 1982 at the Ornago plant, which had a good year.

In Switzerland, an expansion of the foil conversion and printing plant at Rorschach, was completed, while in France, Technal France S.A. (75%-owned) had another good year in a difficult market.

In the Republic of Ireland, construction reached more than 65% completion on the 800,000 tonne-a-year alumina plant in which Alcan has a 40% interest. Construction delays were minimal and completion of the project is expected in 1983.

In Spain, Alcan agreed to subscribe approximately \$42 million during 1981 and 1982, being its share (42.7%) of a capital increase in Endasa, (57.3%-owned by Instituto Nacional de Industria). The main purpose of the capital increase was to permit Endasa to subscribe to its 55% share of a capital increase for the aluminum/alumina complex at San Ciprian, to which the 45% minority shareholders also subscribed pro rata. The capital increase is expected to be completed by 31 March 1982. The alumina plant at San Ciprian came into full production last September. Following new legislation by the Government of Spain, the production of aluminum in Spain benefits as of January 1982 from a special energy tariff, intended to remain competitive with energy supplies to the aluminum industry in the common market.

The outlook for the European area is for slow improvement from the very poor results of 1981.

Japan



Japanese demand for primary aluminum continued weak in 1981, declining for the third consecutive year. Housing starts fell to their lowest levels in more than a decade and domestic demand for consumer goods was slow.

Prices for imported spot metal dropped 25% as imports of this lower priced metal rose sharply to exceed one million tonnes. As a consequence, Japanese smelters with their uniquely high oil costs, and resultant high power costs, were unable to operate profitably and were forced to reduce their production by 40% to an annual rate of under 600,000 tonnes at year end. As a result of this abrupt cutback from the one million tonne level which had prevailed for some years, the Japanese government is working with the industry to maintain a minimum level of domestic production.

Nippon Light Metal Company, Ltd., 50%-owned by Alcan, showed a loss, although sales revenues, which are not included in Alcan's consolidated sales, declined only by 14% to the equivalent of \$1.8 billion. Production from the 130,000 tonne oil-fired Tomakomai smelter was reduced to 54,000 tonnes at year end, and major efforts are being taken to rationalize further the substantial fabricating operations. Prospects for 1982 are not encouraging in view of the current level of ingot inventories in Japan.

Toyo Aluminium K.K., a foil and paste producer, also 50%-owned, achieved higher earnings despite reduced domestic demand. Sales revenues equivalent to \$211 million, were down 11% from 1980.

Asia



The economies of most Asian countries continued to experience relatively high growth rates, although the rate of increase was slowed by falling world demand for many basic commodities, including aluminum.

In India, the aluminum industry suffered another difficult year. Indian Aluminium Company, Limited, owned 55% by Alcan, as well as other domestic producers, continued to operate their smelters at a loss as a result of the government's reluctance to permit increases in the controlled price of metal, forcing producers to absorb all increases in raw material costs. Indian Aluminium has been able to offset this somewhat with profits from its fabricating and chemical operations. Finally in December, the Indian Government permitted a price increase on metal, which restored some margin of profit after two years of losses. At the same time, excise duties were substantially reduced. These changes were long overdue and augur better for 1982.

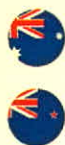
P.T. Alcan Indonesia (70%-owned) had another excellent year. However, towards the end of the year, increased competition from newly-installed facilities was felt. The outlook for 1982 is somewhat clouded by uncertainty about how the Indonesian Government will market its share of metal from the new Asahan smelter, now entering production.

Aluminium Company of Malaysia Berhad (40%-owned) experienced weak demand for sheet products all year. The company arranged during 1981 for new debt and equity financing for a major sheet and foil project, which will increase capacity by 1983. Johore Mining and Stevedoring Company Sdn Berhad (52.5%-owned) had a satisfactory year and is continuing a program of reestablishing mined-out bauxite areas for agriculture and fish farming. The outlook for 1982 is uncertain in light of the cutbacks at smelters in Japan and Taiwan, Johore Mining's principal customers.

Alcan Thai Company Limited had a difficult year in an extremely competitive market, a situation which is expected to continue in 1982. An additional extrusion press has been acquired.

Alcan continued contractual sales of ingot to the People's Republic of China, but total shipments were sharply lower than in previous years.

South Pacific



Australia

The Australian economy was generally buoyant in 1981 with resource-based industries providing continuing impetus. Most economic indicators performed better than in recent years, though inflation is persisting. The government has moved to tighter monetary and fiscal policies to offset inflationary pressures and control investment inflow. Rapidly rising labor costs are also cause for concern.

Despite generally favorable domestic conditions, the depressed level of international demand for aluminum and the inability to pass on cost increases in the face of lower prices, adversely impacted on earnings of Alcan Australia Limited (70%-owned), whose smelter capacity is operated in part for the export market.

Alcan Australia continued its major capital expenditure program with completion of the second stage expansion of its Kurri Kurri smelter in New South Wales to 90,000 tonnes-a-year from 68,000 tonnes. Late in the year, government approvals were received for a third stage expansion of this smelter to 135,000 tonnes annually. Work is proceeding with initial production from the added facilities scheduled for early 1983.

Expansion of sheet fabricating capacity at Granville and foil conversion capacity at Cabramatta, both in New South Wales, continued.

Queensland Alumina Limited, in which Alcan has a 21.4% interest, plans to expand alumina refinery capacity to 2.7 million tonnes annually from the current level of 2.4 million tonnes. Alcan receives alumina from this refinery at smelters in Australia and British Columbia.

In August, Alcan announced that it had decided against proceeding with construction of an export smelter at Bundaberg, Queensland. The decision reflected the less encouraging near and medium-term outlook for aluminum demand in world markets. However, Alcan considers Australia a prime location for the development of aluminum facilities and expects that the smelter ultimately will be built.

New Zealand

The New Zealand economy resumed positive growth following depressed conditions in the two previous years. However, inflation remains high with little improvement expected in 1982. Alcan New Zealand Limited had lower consolidated profit than in 1980 in spite of an increase in domestic shipments of about 5%, which helped to offset a decline in export shipments.

The year ahead is expected to be more difficult, with domestic shipments falling and little improvement anticipated in exports.

Africa and the Middle East



Alcan's fabricating operations in Nigeria and Ghana produced disappointing results. In Nigeria, the worldwide glut of crude oil reduced oil exports and resulted in lower foreign exchange earnings. Demand for aluminum products increased, but due to national strikes and a major shutdown of the state power system, fabricating operations were sharply curtailed during the second half with an adverse impact on earnings.

In the Cameroon, Alcan continued its geological exploration work in association with the government to evaluate the possibilities of extracting and processing bauxite from the western region of the country. The program will continue in 1982 and is expected to be completed in 1983.

In the Republic of South Africa, the economy did not feel the effects of the world recession until the third quarter and Hulett's Aluminium Limited, in which Alcan has a 24% interest, posted good results.

The bauxite mining operations of Compagnie des Bauxites de Guinée, in which Alcan has a 13.8% interest, produced and shipped 8.6 million tonnes in 1981, of which 2.2 million tonnes was taken by Alcan.

In Morocco, Alcan and a group of Moroccan businessmen, jointly formed Altrois, a holding company which has acquired an 82% interest in a company that manufactures seam-welded aluminum irrigation tubing and associated cast couplings and accessories.

Alcan continues to assess and develop opportunities for investment in other African and Middle Eastern countries.

Production, Sales and Raw Materials

Primary Aluminum

(in thousands of tonnes)

<i>Subsidiaries</i>	<i>Production 1981</i>	<i>Rated Capacity End 1981</i>	<i>Planned Capacity at End of Year</i>	
			<i>1982</i>	<i>1983</i>
Canada	*962	1,018	1,075	1,075
United Kingdom	125	125	125	125
Brazil	87	88	118	118
Australia	89	90	90	112
India	88	118	118	123
Germany	44	44	44	44
	1,395	1,483	1,570	1,597

* Includes 45,400 tonnes toll-smelted for a related company (see page 18).

Related Companies

Alcan holds a 50% equity in Nippon Light Metal Company, Ltd., Japan, which had a capacity of 198,000 tonnes at the end of 1981. Alcan also holds a 42.6% equity in Empresa Nacional del Aluminio, S.A., Spain, with a rated capacity of 126,000 tonnes at the end of 1981 and which, in turn, owns 55% of the 180,000-tonne San Ciprian smelter.

Consolidated Sales of Aluminum by Markets

(in thousands of tonnes)

	<i>1981</i>	<i>1980</i>	<i>1979</i>	<i>1978</i>	<i>1977</i>
Canada	224	231	241	220	220
United States	459	461	402	450	374
Latin America	110	140	145	121	116
European Economic Community	416	424	434	382	364
Asia and South Pacific	279	278	255	335	185
All Others	59	54	55	89	59
	1,547	1,588	1,532	1,597	1,318

Mining — Operating Statistics

	<i>1981</i>	<i>1980</i>
Proved bauxite reserves at beginning of year (millions of crude tonnes)		
Subsidiaries	263	252
Alcan's share of related companies	71	68
	334	320
* Total weighted average aluminum content		
Subsidiaries	27%	27%
Alcan's share of related companies	30%	31%
Bauxite mined (millions of crude tonnes)		
Subsidiaries	5	5
Alcan's share of related companies	4	4
	9	9
Primary aluminum produced by subsidiaries (millions of tonnes)	1.4	1.3

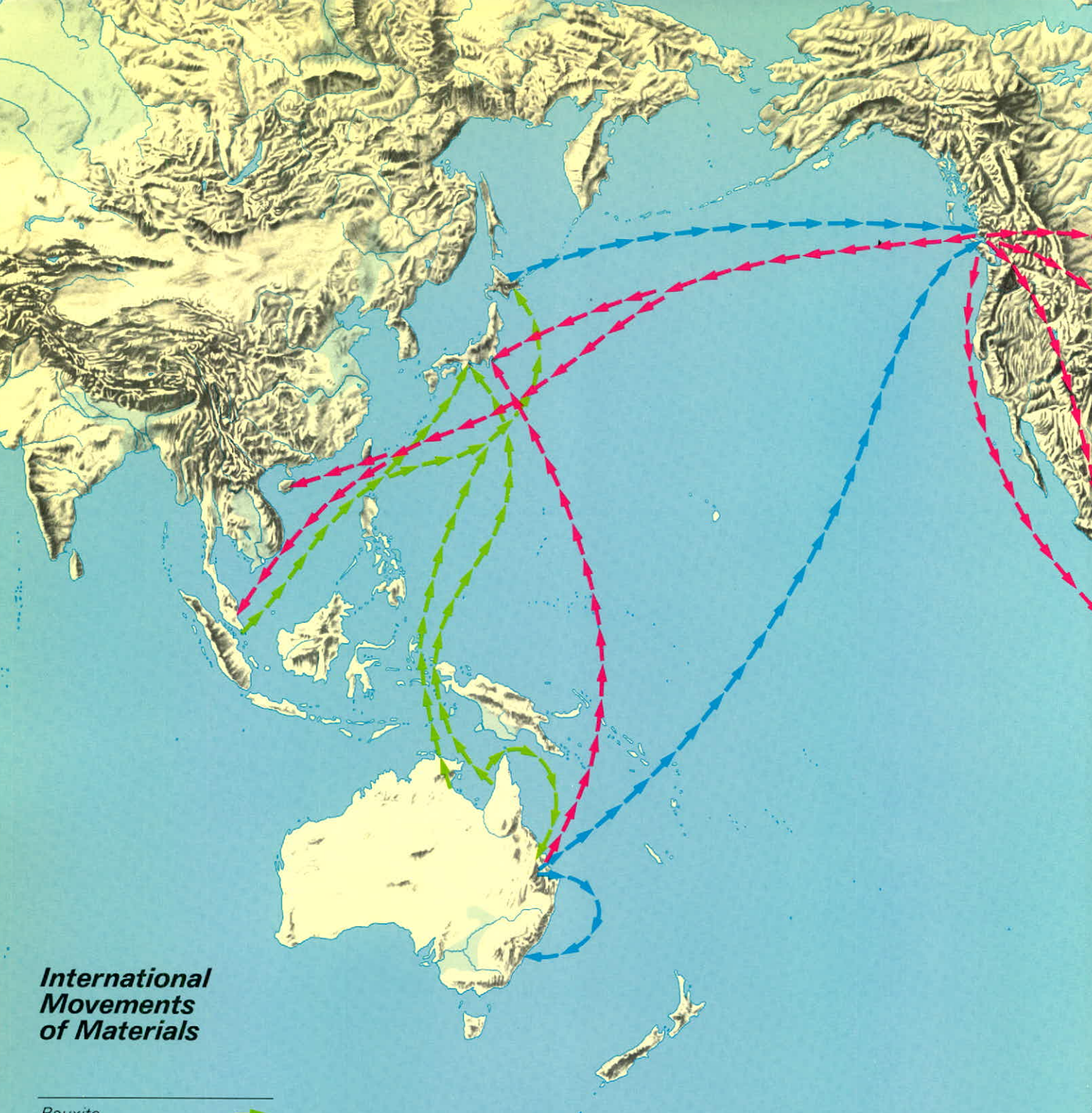
* The amount of aluminum extractable is always less than the total aluminum content, varying according to the nature of the bauxite, the process technology employed to extract the intermediate product, alumina, and the alumina plant efficiency.

Basic Raw Materials

Bauxite, the basic raw material from which aluminum is derived, is mined by Alcan subsidiaries in Jamaica, Brazil, India, Malaysia and France. It is also acquired through Alcan's equity interest in consortium mining companies in Guinea and Brazil and by purchase from third parties.

Alumina, or aluminum oxide, is the intermediate product between bauxite and aluminum and is extracted from bauxite by a chemical process. Alcan operates alumina plants in Jamaica, Brazil and India, adjacent to the mining operations in those countries. The company also operates two alumina plants in Quebec, Canada, supplied principally with bauxite from Guinea and Brazil. Alcan holds an equity interest in Queensland Alumina Limited in Australia and in the San Ciprian alumina plant in Spain.

The alumina produced in Brazil, India and Spain is consumed by Alcan's affiliated smelters in those countries. The Australian alumina is shipped to British Columbia and also supplies Alcan's smelter in Australia. Jamaican alumina is supplied to Alcan smelters in Canada and Europe and is sold to third-party smelting companies.



International Movements of Materials

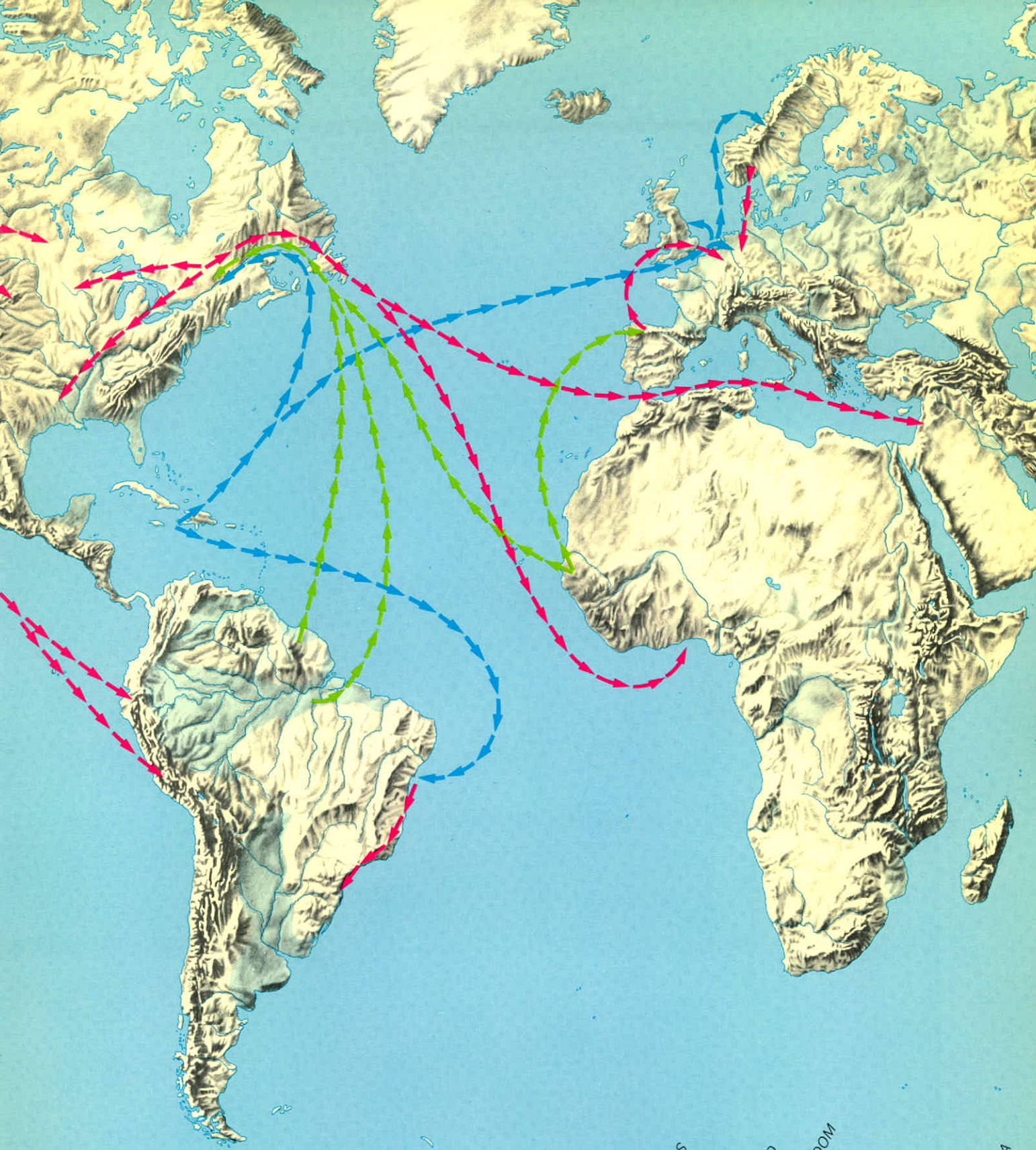
- Bauxite
- Alumina
- Primary ingot

Operations by Country

- INDIA
- INDONESIA
- JAPAN
- MALAYSIA
- THAILAND
- AUSTRALIA
- NEW ZEALAND

- CANADA
- UNITED STATES
- JAMAICA
- TRINIDAD
- ARGENTINA
- BRAZIL

Bauxite mining											
Alumina refining											
Primary smelting											
Fabricating											



COLOMBIA
MEXICO
URUGUAY
VENEZUELA



BELGIUM
FRANCE
GERMANY
IRELAND
ITALY
NETHERLANDS
SPAIN
SWITZERLAND
UNITED KINGDOM
GHANA
GUINEA
NIGERIA
SOUTH AFRICA



Information by Geographic Areas

<i>(in millions of U.S.\$)</i>	<i>Canada</i>	<i>United States</i>	<i>Latin America</i>	<i>Europe</i>	<i>All Other</i>	<i>Eliminations</i>	<i>Total</i>
Year ending 31 December 1981							
Sales and operating revenues							
To subsidiaries	743	101	—	25	405	(1,274)	—
To others	1,108	1,319	409	1,373	769		4,978
	1,851	1,420	409	1,398	1,174	(1,274)	4,978
Net income	231	18	24	(71)	83	(21)	264
Capital expenditures	404	48	146	236	140	—	974
31 December 1981							
Current assets	1,063	482	208	665	576	(343)	2,651
Fixed assets—net	1,546	225	354	704	438	—	3,267
Investments and other assets	52	9	115	95	150	—	421
Identifiable assets	2,661	716	677	1,464	1,164	(343)	6,339
Current liabilities and deferred credits	517	178	154	397	316	(278)	1,284
Capital employed	2,144	538	523	1,067	848	(65)	5,055
Number of employees (thousands)	20	5	9	16	16	—	66
Year ending 31 December 1980							
Sales and operating revenues							
To subsidiaries	723	87	—	16	422	(1,248)	—
To others	1,176	1,273	448	1,674	644	—	5,215
	1,899	1,360	448	1,690	1,066	(1,248)	5,215
Net income	344	33	63	21	132	(51)	542
Capital expenditures	377	53	61	146	115	—	752
31 December 1980							
Current assets	870	491	254	728	508	(284)	2,567
Fixed assets—net	1,234	198	261	412	336	—	2,441
Investments and other assets	68	8	60	188	138	—	462
Identifiable assets	2,172	697	575	1,328	982	(284)	5,470
Current liabilities and deferred credits	466	176	157	456	266	(212)	1,309
Capital employed	1,706	521	418	872	716	(72)	4,161
Number of employees (thousands)	20	5	10	16	16	—	67
Year ending 31 December 1979							
Sales and operating revenues							
To subsidiaries	586	62	—	19	257	(924)	—
To others	972	1,073	439	1,423	483	—	4,390
	1,558	1,135	439	1,442	740	(924)	4,390
Net income	189	48	40	98	80	(28)	427
Capital expenditures	215	35	53	132	60	—	495
31 December 1979							
Current assets	786	475	165	657	396	(290)	2,189
Fixed assets—net	923	163	217	363	249	—	1,915
Investments and other assets	69	5	57	147	108	—	386
Identifiable assets	1,778	643	439	1,167	753	(290)	4,490
Current liabilities and deferred credits	375	173	101	386	226	(234)	1,027
Capital employed	1,403	470	338	781	527	(56)	3,463
Number of employees (thousands)	19	5	9	16	16	—	65

Sales to subsidiary companies are made at a fair market price recognizing volume, continuity of supply and other factors.

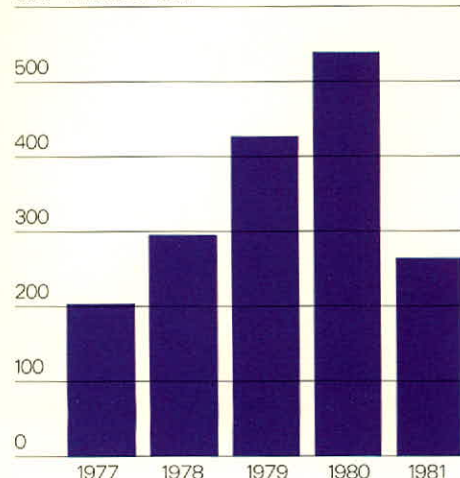
Net income is total revenues less expenses directly related to the geographic area in accordance with generally accepted accounting principles.

Capital employed represents the total book value of the net assets located in each area.

Management's Discussion and Analysis

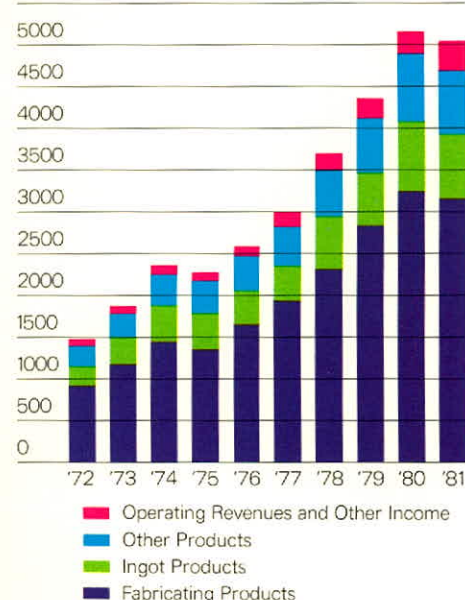
Net Income

600 Millions of US\$



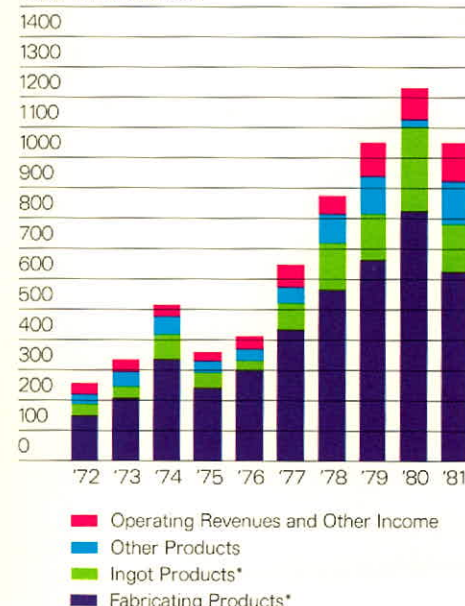
Sources of Consolidated Revenues

5500 Millions of US\$



Sources of Consolidated Gross Profit

1500 Millions of US\$



*Including profit at all preceding stages of production (raw materials, power, ingot, etc.)

Trend of Earnings

Between 1976 and 1980, world aluminum demand improved consistently and prices were generally rising faster than the rate of inflation. Starting in late 1980, the recession reversed this trend while costs continued to increase with continued high world inflation. Although the longer term outlook remains favorable to continued growth of aluminum demand, the present world conditions will likely continue to depress Alcan's earnings.

Results of Operations

Shipments for 1981 fell by less than 3%. In North America the market for fabricated products held up remarkably well and Alcan was able to gain market share in certain segments. The impact of softer markets was more pronounced in the fourth quarter with shipments of 356,000 tonnes representing a 7.5% decline from the corresponding period of 1980.

	1981	1980	1979
Tonnage ('000 m.t.)	1,547	1,588	1,532
Net Income before extraordinary items (millions U.S. \$)			
Historical cost method	264	542	406
Current cost method	66	379	295
Return on Average Shareholders' Equity			
Historical cost method	10%	24%	23%
Current cost method	1%	8%	6%

Revenues

More important to the results of Alcan than the decline in volume, price realizations weakened significantly after four consecutive years of increase, mainly in response to weaker markets but also as a result of the weakening of the value of the major currencies against the U.S. dollar. Alcan's net realizations per tonne of ingot products were, on average, 7% lower than during 1980 but remained 16% higher than 1979. Comparable numbers for fabricated products were 2% lower than 1980, but 11% higher than 1979.

Gross Profit

Total gross profit dropped by 26% during 1981. All segments suffered from continued cost increases and generally lower prices. The impact was more severe on ingot products than on fabricated products which benefited from the strength of the U.S. market in the first half.

In addition to aluminum products, Alcan sells a variety of non-aluminum products. These include other metals purchased for resale in the U.S., alumina, bauxite and other chemicals. Their contribution of \$125 million in 1981 was the same as in 1980.

Contributions to gross profit by major product groupings were as follows:

	1981	1980	1979
Fabricated products	60%	61%	65%
Ingot products	16	22	15
Other products	12	9	10
Shipping and other services	12	8	10
	100%	100%	100%

In determining gross profit, inventory costs have been charged against sales revenues on the basis of monthly average historical costs rather than most recent costs. The inventory profit which results from this and which is included in gross profit is estimated at \$79 million in 1981 compared to \$114 million for 1980 and \$86 million for 1979.

Interest

In 1981, interest costs charged to operations increased substantially from \$107 million to \$186 million, mainly as a result of a higher level of borrowings. An additional factor in the increase was the generally higher rates of interest paid on new and existing floating rate debt.

Tax Rate

Alcan's effective tax rate was 32% in 1981, compared to 42% and 34% for 1980 and 1979, respectively.

Alcan benefited significantly in all three years from tax reductions from investment allowances resulting from its large capital expenditure program, particularly in Canada. This was especially the case in 1981. Other reductions in the effective tax rate in 1979 and 1981 arose from reversals of tax provisions no longer required relating to U.K. stock relief. The effective tax rate in 1981 would have been lower had it not been for the adverse effect of unusually large non-tax-deductible translation losses.

Equity Income

Equity income was a negative \$16 million in 1981 compared to profits of \$25 million in 1980 and \$21 million in 1979.

The European economies remained in recession through 1981 creating very difficult business conditions for Alcan's related companies in Europe. The losses were particularly heavy for Hunter Douglas N.V. (25%-owned) and Endasa (43%-owned), whose results were also affected by high financial and energy costs during 1981, the first full year of operation of a new 180,000 tonne smelter and 800,000 tonne alumina plant.

In Japan, heavy price pressures from imported spot metal forced further capacity cutbacks by local smelters. Nippon Light Metal Company, Ltd., Alcan's 50% affiliate in Japan, recorded a loss in 1981. Alcan's other 50% affiliate in Japan, Toyo Aluminium K.K. maintained its profitability in spite of difficult market conditions.

In Mexico, although Alcan's 49% owned affiliate had a more difficult year than in 1980, an important sheet and foil acquisition in the first half enabled the company to come close to maintaining its strong contribution to equity earnings.

Liquidity and Capital Resources

Despite the fall-off in earnings, Alcan was able to adhere to its record capital expenditure program for 1981 thanks to its strong balance sheet position at the start of the year.

At \$974 million, total capital spending was in fact slightly above the \$950 million original target due to a decision taken close to the end of the year to restructure, as a branch of Aluminum Company of Canada, Limited, the company's 40% participation in the Aughinish alumina project in Ireland. As a result of this change Alcan's 40% interest in construction in progress on the project and in related debt financing is included for the first time in the company's consolidated balance sheet. In previous years only Alcan's equity contributions to the funding of the project have been included.

While capital spending momentum was maintained despite the weakening business climate, working capital investment grew significantly during the year because of it. The build-up of inventories, combined with a large reduction in amounts owing for income and other taxes, much more than offset the impact of lower prices and volumes on year end receivables. Net investment in operating working capital (i.e. exclusive of cash and borrowings) grew by \$277 million in 1981, compared with an increase of \$159 million in 1980, as shown below:

In millions of U.S.\$	1981	1980	1979
Receivables	740	848	827
Aluminum	974	785	609
Raw materials and other supplies	734	651	525
Payables	(764)	(700)	(614)
Income and other taxes	(48)	(225)	(147)
	1,636	1,359	1,200

Reflecting these high levels of new fixed and working capital investments, Alcan's debt/equity ratio moved up from 30:70 at the beginning of the year to 41:59 at the end. (For this purpose, debt includes short-term borrowings and equity includes minority interests.) A ratio of 41:59 is one which the company considers satisfactory, but with the business downturn continuing it will be exceeded in 1982.

Capital spending plans for the short-term have been carefully reviewed and cut back wherever this can be done without serious jeopardy to projects already under way, to standards for basic maintenance of production facilities and to the company's objectives relating to environment and working conditions. In particular, work will continue in Canada on completion of the third line of the Grande Baie smelter, on the modernization and oil conservation project at the Vaudreuil chemical complex in Quebec and on a new carbon plant at Kitimat, British Columbia; in Brazil on completion of the Aratú smelter expansion; and in Ireland on the Aughinish alumina plant. These projects all involve continuing heavy expenditures. In addition, Alcan will be contributing new equity to Endasa, during the course of the year to strengthen that company's financial structure.

Two large projects which are being stretched out are the new hot mill at Pindamonhangaba in Brazil, and the third stage expansion of the Kurri Kurri smelter in Australia. The overall capital program for 1982 is at present expected to be about \$700 million but will remain subject to review throughout the year. Greater flexibility exists for 1983.

Production rates, currently high relative to the industry as a whole, may require adjustment as the year progresses to limit inventory accumulation and relieve unacceptable balance sheet pressures. Although Alcan's large, low-cost hydro power base in Canada, using water energy that would otherwise be wasted, provides strong incentive for maintaining high production levels, the company recognizes that some sacrifice in this area may prove more practical, and less harmful to its longer-term position, than further substantial cuts in the 1982 capital program.

Liquidity and Capital Resources

1300 Millions of US\$



The need for either one of these measures will depend upon how rapidly cash generation recovers from the abrupt decline of the last quarter of 1981. The outlook for the first half of 1982 is not encouraging.

The accompanying chart demonstrates that 1981 was the only year in the past four in which available cash generation, after dividend payment did not exceed or come reasonably close to covering the company's entire fixed and working capital requirements. A substantial short-fall is expected again in 1982.

Financing for the 1981 short-fall came almost entirely from new debt, although \$50 million was raised through the issue of new common shares of the parent company—\$24 million through three new shareholder investment plans (see Note 10 to the Financial Statements) and \$26 million by way of acquisition of the minority interest in the U.K. subsidiary. Short-term borrowings increased by \$61 million and long-term debt, net of repayments, by \$725 million.

Virtually all of these new borrowings were at floating rates of interest because of difficult conditions in the North American and European bond markets. During the year, Aluminum Company of Canada, Limited increased its revolving bank credit facility from \$200 million to \$600 million and its drawings against the facility from \$40 million to \$460 million. Other major borrowers were subsidiaries in Australia and Brazil, under bank credits put in place during 1980. These same two subsidiaries arranged further new financings in the Eurodollar floating rate market at the end of the year to meet their 1982 requirements.

However, in 1982 the biggest borrowing unit in the Group is again expected to be Aluminum Company of Canada, Limited. It is intended that this subsidiary have substantial recourse to the fixed rate bond markets in the U.S. and Europe, and initial arrangements for this have already been made. Timing and amounts will depend upon market conditions, with the objective of not only covering net new financing requirements but also providing more leeway under the \$600 million revolving bank credit through partial repayment of existing drawings.

An important aspect of the earnings decline experienced by most subsidiaries of the Group in 1981 has been the reduction it has caused in their dividend payments to the parent company. As a holding company, the parent is dependent on these dividend flows to meet its own dividend payments as well as to fund such contributions as it may be called upon to make to the investment programs of subsidiaries and related companies. Parent liquidity is a matter which will require continuing attention throughout 1982.

Dividend

Dividends totalled \$146 million in 1981 compared to \$109 million in 1980 and \$85 million in 1979. An increase in the quarterly dividend from 35¢ to 45¢ was declared on 5 February 1981 by Alcan's Board of directors. The 45¢ quarterly rate was maintained throughout 1981 and the first quarter of 1982.

Quarterly Dividends and Market Price (NYSE)

	1981			1980		
	Dividends Paid per Share	Market Price of Common Shares		Dividends Paid per Share	Market Price of Common Shares	
		High	Low		High	Low
First	0.45	40.0	31.375	0.30	32.75	23.312
Second	0.45	38.125	27.75	0.35	29.125	22.625
Third	0.45	28.875	23.125	0.35	38.875	26.25
Fourth	0.45	25.25	19.625	0.35	38.25	32.375
Year	1.80			1.35		

Responsibility for Financial Reporting

Alcan's management is responsible for the integrity and fair presentation of the accompanying financial statements. These have been prepared in accordance with generally accepted accounting principles in Canada, conforming in all material respects with international standards, and have been applied on a consistent basis except for the change explained in note 1 of the financial statements.

Alcan's policy is to maintain systems of internal accounting and administrative controls of high quality consistent with reasonable cost. Such systems are designed to provide reasonable assurance that the financial information is accurate and reliable and that company assets are adequately accounted for. The Audit Committee meets regularly with representatives of the independent auditors and with members of management to satisfy themselves that Alcan's policy is being followed.

The annual financial statements are reviewed by the Audit Committee and are approved by the Board of directors. In addition, the financial statements are examined by the shareholders' independent auditors, Price Waterhouse, whose report appears on page 42.

Quarterly Financial Data (unaudited)

(in millions of U.S. \$)

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
1981				
Revenues	\$ 1,305	\$ 1,338	\$ 1,223	\$ 1,187
Costs and expenses	1,134	1,185	1,142	1,151
Income taxes	82	61	12	(13)
Equity income and minority interests	(7)	(3)	(2)	(23)
Net income	\$ 82	\$ 89	\$ 67	\$ 26
Income per common share (U.S. \$)	1.01	1.09	0.82	0.32
1980				
Revenues	\$ 1,310	\$ 1,319	\$ 1,320	\$ 1,315
Costs and expenses	1,058	1,062	1,097	1,109
Income taxes	108	114	91	80
Equity income and minority interests	4	(6)	—	(1)
Net income	\$ 148	\$ 137	\$ 132	\$ 125
Income per common share (U.S. \$)	1.83	1.70	1.63	1.54
1979				
Revenues	\$ 1,086	\$ 1,145	\$ 1,073	\$ 1,146
Costs and expenses	912	1,004	948	961
Income taxes	74	50	15	72
Equity income and minority interests	(3)	(3)	(6)	4
Extraordinary gain	—	21	—	—
Net income	\$ 97	\$ 109	\$ 104	\$ 117
Income per common share (U.S. \$)				
Before extraordinary gain	1.19	1.08	1.29	1.45
Extraordinary gain	—	.27	—	—
Net income	1.19	1.35	1.29	1.45

Consolidated Statement of Income

Year ending 31 December (in millions of U.S. \$)		1981	1980	1979
Revenues				
	Sales	\$4,732	\$4,992	\$4,195
	Operating revenues	246	223	195
	Other income (principally interest)	75	49	60
		5,053	5,264	4,450
Costs and expenses				
	Cost of sales and operating expenses	3,801	3,682	3,240
	Depreciation	202	162	149
	Selling, research and administrative expenses	401	352	308
	Interest on debt not maturing within one year (note 1)	92	61	85
	Other interest	94	46	29
	Other expenses	22	23	14
		4,612	4,326	3,825
Income before income taxes and other items		441	938	625
	Income taxes (note 2)	142	393	211
Income before other items		299	545	414
	Equity income (loss)	(16)	25	21
	Minority interests	(19)	(28)	(29)
Income before extraordinary gain		264	542	406
Extraordinary gain		—	—	21
Net income (note 3)		\$ 264	\$ 542	\$ 427
In U.S. \$				
Income per common share				
	Before extraordinary gain	\$3.24	\$6.70	\$5.01
	Extraordinary gain	—	—	.27
	Net income	\$3.24	\$6.70	\$5.28
Dividends per common share		\$1.80	\$1.35	\$1.05

Consolidated Balance Sheet – Assets

31 December (in millions of U.S. \$)		1981	1980	1979
Current assets				
	Cash and time deposits	\$ 203	\$ 283	\$ 228
	Receivables	740	848	827
	Inventories			
	Aluminum	974	785	609
	Raw materials	470	412	312
	Other supplies	264	239	213
		2,651	2,567	2,189
Deferred charges		62	56	45
Deferred receivables (note 4)		83	80	88
Investments in companies owned 50% or less (note 5)		276	326	253
Property, plant and equipment				
	Cost (note 6)	5,436	4,459	3,808
	Accumulated depreciation	2,169	2,018	1,893
		3,267	2,441	1,915
Total assets		\$6,339	\$5,470	\$4,490

Consolidated Balance Sheet – Liabilities and Shareholders' Equity

31 December (in millions of U.S. \$)		1981	1980	1979
Current liabilities				
	Payables	\$ 764	\$ 700	\$ 614
	Short-term borrowings (principally from banks)	304	243	109
	Income and other taxes	48	225	147
	Debt maturing within one year (note 7)	49	26	44
		1,165	1,194	914
Debt not maturing within one year (note 7)		1,612	910	759
Deferred credits (note 8)		119	115	113
Deferred income taxes		564	514	397
Minority interests (note 9)		248	274	275
Shareholders' equity				
	Capital stock			
	Preferred shares	—	—	2
	Common shares (note 10)	477	427	427
	Retained earnings (note 11)	2,154	2,036	1,603
		2,631	2,463	2,032
Commitments and guarantees (note 12)				
Total liabilities and shareholders' equity		\$6,339	\$5,470	\$4,490

Approved by the Board: David M. Culver, Director
John H. Hale, Director

Consolidated Statement of Changes in Financial Position

Year ending 31 December (in millions of U.S. \$)		1981	1980	1979
Source of Funds				
	Income after income taxes	\$ 299	\$ 545	\$ 414
	Depreciation	202	162	149
	Deferred income taxes	50	117	56
	Other	(5)	7	—
	From operations	546	831	619
	New debt	782	197	152
	Common shares (note 10)	50	—	—
	Sales of investments			
	(including extraordinary gain)	11	6	71
	Disposals of plant and equipment	12	14	20
		1,401	1,048	862
Application of funds				
	Plant and equipment	869	683	451
	Investments	105	69	44
	Debt repayments	130	62	80
	Dividends paid to Alcan shareholders	146	109	85
	Dividends paid to shareholders of subsidiary companies	19	18	20
	Other—net	19	9	20
		1,288	950	700
Increase in working capital (note 13)		113	98	162
Working capital—beginning of year		1,373	1,275	1,113
Working capital—end of year		\$1,486	\$1,373	\$1,275

Consolidated Statement of Retained Earnings

Year ending 31 December (in millions of U.S. \$)		1981	1980	1979
	Retained earnings—beginning of year	\$2,036	\$1,603	\$1,261
	Net income	264	542	427
		2,300	2,145	1,688
	Dividends	146	109	85
	Retained earnings—end of year (note 11)	\$2,154	\$2,036	\$1,603

1. Summary of accounting policies

Principles of consolidation

The consolidated financial statements, which are prepared in accordance with generally accepted accounting principles in Canada, include the accounts of all companies more than 50% owned. In addition, under the equity accounting principle, consolidated net income includes Alcan's equity in the net income or loss of all companies 20-50% owned and the investments in these companies have been increased or decreased by Alcan's share of their undistributed net income or loss since acquisition. When the cost of an investment differs from the book value of Alcan's equity therein at date of acquisition, the difference is amortized over the estimated average useful life of the fixed assets acquired.

Intercompany items and transactions, including profits in inventories, are eliminated.

Translation of accounts into United States dollars

The consolidated financial statements are expressed in U.S. dollars, the principal currency of international trade and of Alcan's business.

Current assets (excluding inventories), current liabilities and long-term monetary assets and liabilities included in the consolidated balance sheet are translated at the rates of exchange at year end. Other balance sheet items are translated at the rates prevailing at the respective transaction dates. Accounts included in the consolidated statement of income are translated at the average rates prevailing during the year except for the cost of inventories and depreciation which are translated at rates prevailing when the related assets were acquired. Translation gains and losses are included in net income except for gains and losses relating to the translation of long-term monetary assets and liabilities which are deferred and amortized over the remaining lives of the related items.

Capitalization of interest

Commencing 1980 Alcan adopted the practice of capitalizing interest on major projects under construction. Interest costs capitalized for the year 1981 were \$64 (1980: \$36) increasing net income for the year by \$43 (1980: \$26).

Other

Aluminum, raw materials and other supplies are stated at cost (determined for the most part on the monthly average method) or net realizable value, whichever is the lower.

Depreciation is calculated on the straight-line method using rates based on the estimated useful lives of the respective assets.

Income per common share is calculated by dividing net income by the average number of shares outstanding (1981: 81.6 million; 1980 and 1979: 80.9 million).

2. Income taxes

	1981	1980	1979
Income before income taxes and other items			
Canada	\$384	\$584	\$256
Other countries	57	354	369
	441	938	625
Current income taxes			
Canada	50	160	32
Other countries	42	116	123
	92	276	155
Deferred income taxes			
Canada	88	81	45
Other countries	(38)	36	11
	50	117	56
Total income tax provision	\$142	\$393	\$211

The composite of the applicable statutory corporate income tax rates in Canada is presently 51.2% (51.0% in 1980, 48.6% in 1979). Profits earned by subsidiary companies located outside Canada are generally subject to income taxes at rates comparable to this composite rate. Dividends paid by these subsidiary companies are generally tax-exempt upon receipt in Canada. Taxes withheld at source are included in current income taxes—other countries.

The following is a reconciliation of income taxes calculated at the above composite rates with the total income tax provision:

Income taxes at the composite rate	\$226	\$478	\$304
Reduction (increase) attributable to:			
Investment and depletion allowances	84	85	58
Deferred taxes provided on U.K. inventory appreciation relief no longer required	19	—	23
Non-deductible exchange losses	(50)	5	8
Other—net	31	(5)	4
Income tax provision	\$142	\$393	\$211

The deferred income taxes arise principally as a result of depreciation timing differences except for the \$19 and \$23 credited to deferred income taxes in the U.K. in 1981 and 1979, respectively.

3. Currency translation

Currency translation losses included in net income were \$60 in 1981, \$33 in 1980 and \$20 in 1979, including losses (gains) of \$181 in 1981, \$7 in 1980 and \$(3) in 1979 arising from the translation of cost of inventories.

The Financial Accounting Standards Board in the United States in Statement No. 8 requires that companies reporting to investors in the United States follow the practice of absorbing immediately in income unrealized exchange gains and losses on the translation of non-U.S. dollar long-term monetary assets and liabilities. However, Alcan follows the practice recommended by The Canadian Institute of Chartered Accountants of deferring such unrealized gains and losses and amortizing them over the remaining lives of the related items. The following table compares reported net income under the Alcan method with the net income that would have been reported under the FAS 8 method together with the cumulative effect on retained earnings.

	1981		1980		1979	
	Alcan Method	FAS 8 Method	Alcan Method	FAS 8 Method	Alcan Method	FAS 8 Method
Consolidated net income						
First quarter (unaudited)	\$82	\$112	\$148	\$171	\$97	\$98
Second quarter (unaudited)	89	129	137	124	109	109
Third quarter (unaudited)	67	99	132	127	104	98
Fourth quarter (unaudited)	26	6	125	147	117	121
	264	346	542	569	427	426
Dollars per common share	3.24	4.25	6.70	7.03	5.28	5.26
Consolidated retained earnings						
Beginning of year	2,036	1,985	1,603	1,525	1,261	1,184
Year end	2,154	2,185	2,036	1,985	1,603	1,525

4. Deferred receivables

Deferred receivables include \$33 (\$35 in 1980 and \$41 in 1979) due with interest over the period 1983 to 1991 from the Government of Guyana in respect of the nationalization in 1971 of Alcan's bauxite and alumina assets and \$9 (\$24 in 1980 and \$26 in 1979) due with interest over the period 1983 to 1988 from the Government of Jamaica in respect of funds deposited and the sale of assets.

5. Investments in companies owned 50% or less

	1981	1980	1979
Shares at cost plus equity in undistributed net income since acquisition			
Companies 50% owned (cost \$50)	\$ 67	\$ 68	\$ 58
Companies 20% to 50% owned (cost \$158)	207	173	147
Shares at cost			
Companies less than 20% owned	2	4	3
	276	245	208
Advances	—	81	45
	\$276	\$326	\$253

The combined results of operations and the financial position of the 20-50% owned companies are summarized below.

Results of operations for the year

Revenues	\$4,724	\$4,861	\$4,012
Costs and expenses	4,734	4,699	3,846
Income before income taxes	(10)	162	166
Income taxes	4	106	70
Net income (loss)	(14)	56	96
* Alcan's share of net income (loss)	(4)	26	27
Dividends received by Alcan	7	7	5

Financial position at 31 December

Current assets	\$2,714	\$3,108	\$2,303
Current liabilities	2,555	2,856	2,087
Working capital	159	252	216
Property, plant and equipment—net	2,326	2,662	2,327
Other assets—net	603	499	458
	3,088	3,413	3,001
Debt not maturing within one year	2,156	2,340	2,081
Net assets	\$ 932	\$1,073	\$ 920
** Alcan's equity in net assets	267	322	250

*Where a company operates as a joint venture supplying materials to each participant, Alcan's share of the net income is applied to the cost of the materials so obtained.

**If deferred unrealized exchange gains and losses had been included in net income, as required by the United States Financial Accounting Standards Board Statement No. 8, Alcan's equity in net assets of companies 20-50% owned would be reduced by \$1. Under Alcan's accounting policy this amount is amortized over the remaining lives of the related items.

6. Property, plant and equipment, at cost

	1981	1980	1979
Land, and property rights	\$ 87	\$ 80	\$ 77
Buildings, machinery and equipment	4,362	3,670	3,329
Construction work in progress	987	709	402
	\$5,436	\$4,459	\$3,808

Capital expenditures in 1982 are expected to be about \$700.

**7. Debt not maturing
within one year**

	1981	1980	1979
Aluminum Company of Canada, Limited			
* Bank loans under \$600 revolving credit agreement due 1985/1989	\$ 460	\$ 40	\$ —
9½% Sinking fund debentures, due 1995	80	82	87
10¾% Sinking fund debentures, due 1994 (Can. \$53)	45	46	49
9½% Sinking fund debentures, due 1988	35	37	41
9¾% Sinking fund debentures, due 1991 (Can. \$45)	38	38	39
5.10% Notes, due 1982/1992	50	54	58
8½% Loan, due 1983/1992 (£18)	35	—	—
Other debt, due 1982/2001	32	10	15
Alcan Aluminum Corporation			
9½% Notes, due 1982/1994	42	44	45
4¾% Notes, due 1982/1984	10	14	17
Other debt, due 1982/2005	19	16	12
Alcan Alumínio da América Latina Ltda and subsidiary companies			
** Bank loans, due 1982/1991	146	99	56
Other debt, due 1982/1984	—	1	3
Alcan Europe N.V. and subsidiary companies			
5½% Bonds, due 1987 (Sw.F. 100)	56	56	63
* Loan, due 1987/1991 (£15)	29	36	33
10½% Loan stock, due 1982/1994 (£8)	15	19	18
* Bank loans, due 1982/1994 (principally £82; DM182)	246	190	189
Other debt, due 1982/2004	47	30	26
Alcan Australia Limited and subsidiary companies			
8½% Bonds, due 1989	23	23	24
** Bank loans, due 1984/1987 (A.\$100)	113	13	—
** Bank loans, due 1982/1989	58	61	22
Other debt, due 1982/1996	12	12	14
Other companies			
** Bank loans, due 1982/1987	18	5	8
Other debt, due 1982/1990	29	30	21
	1,638	956	840
Debt maturing within one year included in current liabilities	(49)	(26)	(44)
Unamortized net amount of unrealized exchange	23	(20)	(37)
	\$1,612	\$910	\$759

* Interest fluctuates with lender's prime commercial rate.

** Interest is related to the London interbank offered rate.

Based on rates of exchange at year end and after allowing for prepayments, sinking fund and other requirements over the next five years amount to \$49 in 1982, \$75 in 1983, \$130 in 1984, \$142 in 1985 and \$201 in 1986.

8. Deferred credits

Deferred credits include \$57 (\$51 in 1980 and \$45 in 1979) prepayment by a related company under an alumina tolling arrangement.

9. *Minority interests in subsidiary companies*

	1981	1980	1979
Preferred shares	\$ 148	\$ 150	\$ 164
Common shares	45	63	60
Retained earnings	51	56	44
	244	269	268
Unamortized amount of unrealized exchange gain on preferred shares	4	5	7
	\$248	\$274	\$275

Preferred shares include \$ 139 issued by Aluminum Company of Canada, Limited of which \$100 is floating rate preferred shares retractable at \$25 per share in series at the option of the holder on 5 July 1984, 1985 and 1986, respectively.

10. *Capital stock*

The authorized share capital is an unlimited number of common shares, without nominal or par value.

Three new investment plans were approved by the shareholders on 26 March 1981, reserving 5,000,000 common shares for offering to shareholders. Under the Share Purchase Plan shareholders can purchase new Alcan common shares at market value for cash. Under the Optional Stock Dividend Plan shareholders can elect to receive their dividends in new Alcan common shares at a 5% discount from market value in lieu of cash. Under the Dividend Reinvestment Plan shareholders can reinvest cash dividends in new Alcan common shares at a 5% discount from market value.

Changes in common shares are as follows:

Balance at end of 1980, 1979 and 1978	80,893,388 Shares	\$427
Issued for cash under:		
Share Purchase Plan	640,653	15
Dividend Reinvestment Plan	111,121	2
Issued under Optional Stock Dividend Plan	300,935	7
Issued in exchange for the minority shareholders' interest in a subsidiary company	705,536	26
Balance at 31 December 1981	82,651,633 Shares	\$477

The Alcan Executive Share Option Plan, approved by the shareholders on 26 March 1981, provides for the granting of options to key employees for the purchase of up to 1,000,000 common shares at not less than 90% of market value on the effective date of the grant. Options cannot be exercised before six months or after ten years from the effective date of the grant. Options covering 405,700 shares were granted as indicated below, all of which remained outstanding at 31 December 1981.

Year of Grant	Effective Date of Grant	Shares Under Option	Option Price
1981	1 July 1981	94,300	Can. \$31.08
1981	1 January 1982	155,700	Can. \$24.53
1981	1 July 1982	155,700	90% of market value on 1 July 1982

11. *Retained earnings*

Consolidated retained earnings at 31 December 1981 include:

- \$142 which, pursuant to the provisions of certain debt and share issues of Aluminum Company of Canada, Limited, is not distributable as dividends either in cash or in kind to Alcan, the holder of its common shares,
- \$66 of undistributed earnings of companies owned 50% or less, and
- \$699, some part of which may be subject to certain taxes on distribution to the parent company. No provision has been made for such taxes because these earnings are reinvested in the business.

12. *Commitments and guarantees*

To assure long-term supplies of bauxite and access to alumina and fabricating facilities, Alcan participates in several long-term cost sharing arrangements with related companies. Alcan's fixed and determinable commitments, which are comprised of long-term debt service in one joint venture and "take-or-pay" obligations in others, are estimated at \$158 in 1982, \$180 in 1983, \$181 in 1984, \$189 in 1985, \$181 in 1986 and \$1,587 thereafter. In addition, Alcan is guarantor of \$148 of long-term debt of certain of the related companies. Alcan's total charges from these related companies were \$214 in 1981, \$206 in 1980 and \$143 in 1979.

Minimum rental obligations amount to \$42 in 1982, \$28 in 1983, \$23 in 1984, \$19 in 1985, \$16 in 1986 and lesser annual amounts thereafter. Total rental expenses amounted to \$85 in 1981 (\$84 in 1980 and \$70 in 1979).

See also reference to capital expenditures in note 6 and debt repayments in note 7.

13. Changes in working capital

	1981	1980	1979
Current assets			
Cash and time deposits	\$ (80)	\$ 55	\$ 39
Receivables	(108)	21	100
Inventories	272	302	68
	84	378	207
Current liabilities			
Payables and short-term borrowings	125	220	59
Income and other taxes	(177)	78	18
Debt maturing within one year	23	(18)	(32)
	(29)	280	45
Net increase	\$113	\$ 98	\$162

14. Supplementary income statement information

	1981	1980	1979
Repairs and maintenance	\$361	\$339	\$269
Taxes, other than payroll and income taxes	94	68	81
Research and development	48	47	34

15. Pension plans

Alcan and its subsidiaries (with some exceptions) have established pension plans in the principal countries where they operate, for the greater part contributory and generally open to all employees. The total pension expense in 1981 was \$69 (\$63 in 1980 and \$48 in 1979). Pension expense includes amortization of unfunded actuarial liabilities which Alcan and its subsidiaries are funding for the most part over periods of 15 years or less.

Based on the most recent actuarial reports the present value of vested accumulated plan benefits was \$664 (\$549 in 1980 and \$479 in 1979), and of non-vested benefits was \$11 (\$9 in 1980 and \$8 in 1979). These present values were determined using a weighted average assumed rate of return of 6.9%. The net assets available for benefits amounted to \$804 (\$668 in 1980 and \$507 in 1979) at market values. The apparent surplus will be needed to meet increases in pension liabilities arising from future increases in salaries, which have not been allowed for in the above present values. The effective dates of the principal actuarial reports were 1 January 1981 for the Canadian and United States plans, and 6 April 1980 for the United Kingdom plan.

16. Information by geographic areas

Information by geographic areas is contained in the summary on page 28.

Auditors' Report

**To the Shareholders of
Alcan Aluminium Limited**

We have examined the consolidated balance sheets of Alcan Aluminium Limited as at 31 December 1981, 1980 and 1979 and the consolidated statements of income, retained earnings and changes in financial position for the three years then ended. Our examinations were made in accordance with generally accepted auditing standards and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, these consolidated financial statements present fairly the financial position of the Company as at 31 December 1981, 1980 and 1979 and the results of its operations and the changes in its financial position for the three years then ended, in accordance with generally accepted accounting principles in Canada which (except for the change in 1980 in accounting for interest as described in note 1, with which we concur) have been applied on a consistent basis.

Introduction

Alcan has published inflation accounting information for the past several years, partly voluntarily and partly because of statutory requirements, and has repeatedly stressed the need for inflation accounting. The use of historical costs results in the measurement of various elements contained in the basic historical cost (HC) financial statements in differing economic units. Some balance sheet amounts reflect current values, e.g., cash and receivables, while other amounts represent values of the past—most notably fixed assets but also inventories. Similar mismatches of economic values are contained in the Statement of Net Income. Sales and many elements of expense reflect the economic values as of the transaction dates but cost of sales and depreciation expense are based on past economic values associated with sale or the use of assets purchased or produced in prior periods.

With prolonged periods of inflation, particularly at the high levels experienced in the 1970's and thus far in the 1980's, the use of historical costs significantly understates the economic value of net assets while significantly overstating the economic value of earnings. Alcan believes these anomalies caused by inflation should be adjusted if the readers of financial statements are to obtain a more realistic assessment of the company's results. Accordingly, Alcan is again publishing inflation accounting information in accordance with Statement No. 33 of the Financial Accounting Standards Board (FASB) in the United States. Although Statement No. 33 only calls for restatement of certain historical cost items, a comprehensive set of statements has been developed for both constant dollar (CD) and current cost (CC) methods, as described below, to provide meaningful comparisons against the HC financial statements.

Constant Dollar

CD accounting, by measuring the effects of general price level changes on financial data, gives recognition to the declining purchasing power of the dollar. CD amounts are derived by applying the U.S. Consumer Price Index (CPI) to HC amounts. Thus, for example, a dollar spent or earned at year end 1977 would be equal to \$1.51 in terms of year end 1981 purchasing power.

Current Cost

CC accounting focuses upon the specific changes in prices of assets and expenses associated with the use or sale of assets, and is a method of measuring their current values in terms of what the assets would cost to purchase or produce at the balance sheet date or at the date of use or sale.

CC amounts for the company's assets were determined primarily by using appropriate specific indexes or reliable market prices. For property, plant and equipment this method assumes the assets will be replaced with like technology. Current cost of sales was determined by adjusting historical costs by the estimated specific inflation which occurred between the time of production and the time of sale. The amounts so derived were then restated in terms of year end 1981 dollars for the accompanying statements.

Property, Plant and Equipment

The CC values for net property, plant and equipment are higher than the corresponding CD values because the specific prices for these assets from their dates of acquisition have increased at a faster rate than the general rate of inflation. The amount of price changes resulting from specific and general inflation will vary from year to year depending on prevailing conditions. In 1981 the specific price change greatly exceeded the general price level change whereas in 1980 they were approximately the same.

Holding Gain on Monetary Items

Holders of cash and other monetary assets lose purchasing power during periods of inflation; debtors gain. Alcan has therefore benefited by having greater monetary liabilities than monetary assets as calculated by applying the changes in the U.S. CPI to the net HC monetary liabilities held during the year.

Income Taxes

The CD and CC statements include income taxes in the same amounts as reflected in the HC statements except for the restatement to year end 1981 dollars to conform to the presentation for all other amounts. Alcan's effective tax rate as reported under the HC accounting method was 32% in 1981 but 94% under the CD method and 199% under the CC method.

Inflation Accounting

Conclusions

Both the CD and CC methods undoubtedly give more realistic results in terms of economic reality than HC. The CD method deals with only one aspect of inflation—the declining purchasing power of the dollar. The CC method focuses on specific price changes, but permits the application of judgment in determining many amounts—even the decision to use a specific index rather than other pricing techniques is judgmental.

Alcan likes the simplicity and objectivity of the CD method but feels it necessary to measure the specific rate of inflation on its operations. After all, the funds required to replace the productive assets used in the company's operations will be determined by specific price changes and not by changes in the CPI.

The impact of inflation on the company's 1981 results was clearly dramatic. The CPI increased at a rate slightly less than 9% while sales price realizations declined by some 3%. Thus, sales price realizations did not keep pace with the general rate of inflation by some 12%.

When the market place precludes a company from maintaining sales prices in line with changes in the rate of inflation, especially in capital intensive industries such as aluminum, it is virtually impossible to maintain operating margins. During those periods, it is not possible to generate the necessary funds to maintain existing productive capacity and provide a satisfactory return to shareholders. Alcan's management believes it is imperative to develop more systematic methods to clarify the impact of inflation on the company's operations. Accordingly, Alcan is implementing an internal inflation accounting system to provide management at all levels with financial data adjusted for inflation to assist them in identifying opportunities and developing strategies to provide for the future real growth and health of the company.

Five-Year Summary	1981	1980	1979	1978	1977
HC Data					
In millions of U.S. dollars					
Sales and operating revenues	4,978	5,215	4,390	3,711	3,028
Income from continuing operations	264	542	406	297	205
Shareholders' equity at year end	2,631	2,463	2,032	1,690	1,455
In U.S. dollars per common share					
Income from continuing operations	3.24	6.70	5.01	3.67	2.53
Cash dividends	1.80	1.35	1.05	.78	.55
Market price at year end (NYSE)	23.00	33.25	23.44	16.94	13.13
CD Data in Year End 1981 Dollars					
In millions of U.S. dollars					
Sales and operating revenues	5,145	5,949	5,684	5,346	4,696
Income (loss) from continuing operations	(26)	314	217	172	123
Holding gain on monetary items	175	181	187	148	118
Shareholders' equity at year end	3,906	3,874	3,543	3,319	3,152
In U.S. dollars per common share					
Income (loss) from continuing operations	(.32)	3.88	2.68	2.13	1.52
Cash dividends	1.86	1.54	1.36	1.12	.85
Market price at year end	23.00	36.22	28.70	23.50	19.86
CC Data in Year End 1981 Dollars					
In millions of U.S. dollars					
Sales and operating revenues	5,145	5,949	5,684		
Income (loss) from continuing operations	(109)	198	108		
Holding gain on monetary items	175	181	187		
Shareholders' equity at year end	4,934	4,820	4,534		
Excess of increase in specific prices over (under) general price level of inventories and property, plant and equipment	102	16	(347)		
In U.S. dollars per common share					
Income (loss) from continuing operations	(1.34)	2.45	1.34		
Year End consumer price index (CPI-U: 1967 base year 100)	281.5	258.4	229.9	202.9	186.1

Certain prior years' CD and CC amounts have been restated to conform to refinements in methodology to derive 1981 data.

Consolidated Balance Sheet 31 December (in millions of U.S. dollars)

	<i>Historical as reported</i>		<i>CD in terms of year end 1981 dollars</i>		<i>CC in terms of year end 1981 dollars</i>	
	1981	1980	1981	1980(a)	1981	1980(a)
Current assets excluding inventories	943	1,131	943	1,232	943	1,232
Inventories	1,708	1,436	1,852	1,700	1,837	1,675
Deferred receivables and charges	145	136	145	148	145	148
Investments in companies owned 50% or less	276	326	507	576	507	576
Property, plant and equipment—net	3,267	2,441	4,296	3,637	5,327	4,636
	6,339	5,470	7,743	7,293	8,759	8,267
Current liabilities	1,165	1,194	1,165	1,301	1,165	1,301
Long-term debt	1,612	910	1,612	991	1,612	991
Deferred income taxes and credits	683	629	683	685	683	685
Minority interests	248	274	377	442	365	470
Shareholders' equity	2,631	2,463	3,906	3,874	4,934	4,820
	6,339	5,470	7,743	7,293	8,759	8,267
Rate of return on average capital employed (%)	7	16	4	10	2	7
Rate of return on average shareholders' equity (%)	10	24	4	13	1	8

Consolidated Net Income Information (in millions of U.S. dollars)

	<i>As reported in the financial statements (HC)</i>		<i>As adjusted for general inflation (CD)</i>		<i>As adjusted for changes in specific prices (CC)</i>	
	<i>in historical dollars</i>		<i>in year end 1981 dollars</i>		<i>in year end 1981 dollars</i>	
	1981	1980	1981	1980(a)	1981	1980(a)
Sales and operating revenues	4,978	5,215	5,145	5,949	5,145	5,949
Cost of sales and operating expenses	3,801	3,682	4,058	4,350	4,010	4,332
Depreciation expense	202	162	378	339	509	473
Selling, research and administrative expenses	401	352	415	402	415	402
Interest	186	107	192	122	192	122
Other (income) expenses—net	(53)	(26)	(55)	(30)	(55)	(30)
	4,537	4,277	4,988	5,183	5,071	5,299
Income before income taxes and other items	441	938	157	766	74	650
Income taxes	142	393	147	449	147	449
Equity income and minority interests	35	3	36	3	36	3
Income (loss) from continuing operations	264	542	(26)	314	(109)	198
Holding gain on monetary items	—	—	175	181	175	181
Net income	264	542	149	495	66	379

Inventories, property, plant and equipment

	<i>In year end 1981 dollars</i>	
	1981	1980(a)
Increase in specific prices	664	707
Increase in general price level	562	691
Excess of increase in specific prices	102	16

(a) Restated to conform to refinements in methodology to derive 1981 data.

A Ten-Year Summary

(Restated where necessary to give retroactive effect to changes in accounting practices)

Operating data (thousands of tonnes)	Consolidated aluminum shipments	Ingot and ingot products Fabricated products
	Consolidated primary aluminum production	In Canada Outside Canada
	Consolidated aluminum inventories (end of year)	
	Primary aluminum capacity (end of year)	Consolidated subsidiaries Total subsidiaries and related companies
Consolidated income statement items (U.S. \$ millions)	Total revenues	Sales of aluminum ingot and ingot products Sales of aluminum fabricated products Sales of all other products Operating revenues and other income
	Costs and expenses	Cost of sales and operating expenses Depreciation Interest Income taxes Other
	Equity income	
	Minority interests Income from continuing operations Extraordinary gains Net income	
Consolidated balance sheet items (U.S. \$ millions)	Working capital	
	Property, plant and equipment—net	
	Investments in companies owned 50% or less	
	Long-term debt Deferred income taxes Minority interests and preferred shares Common shareholders' equity Total assets	
Per common share (U.S. \$)	Income from continuing operations	
	Income including extraordinary gains but after preferred dividends	
	Dividends paid	
	Common shareholders' equity Market price NYSE close	
Other statistics	Funds from operations (U.S. \$ millions)	
	Capital expenditures (U.S. \$ millions)	
	Employees (thousands at end of year)	
	Common shareholders (thousands at end of year) Common shares outstanding (millions at end of year)	Registered in Canada (%) Registered in USA (%) Registered in other countries (%)
	Return on average common shareholders' equity	Based on historical cost method (%)

1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
1,316	1,520	1,508	1,272	1,374	1,318	1,597	1,532	1,588	1,547
537	601	584	560	510	440	615	496	533	510
779	919	924	712	864	878	982	1,036	1,055	1,037
799	792	874	761	493	826	898	709	918	962
165	224	264	269	299	280	300	354	384	433
399	404	517	612	476	599	518	410	485	666
1,234	1,261	1,230	1,249	1,236	1,236	1,258	1,347	1,426	1,483
2,106	2,156	2,115	2,144	2,118	2,118	2,086	1,959	1,930	1,987
1,529	1,891	2,427	2,313	2,671	3,058	3,738	4,450	5,264	5,053
267	318	448	441	432	448	661	663	886	789
922	1,191	1,489	1,355	1,674	1,942	2,315	2,827	3,265	3,150
266	306	400	419	452	486	576	705	841	793
74	76	90	98	113	182	186	255	272	321
1,161	1,452	1,795	1,831	2,140	2,269	2,716	3,240	3,682	3,801
94	101	103	111	116	126	138	149	162	202
69	79	100	105	100	90	88	114	107	186
20	35	101	31	45	136	190	211	393	142
126	148	175	187	204	229	285	322	375	423
8	18	11	(13)	(5)	13	5	21	25	(16)
(6)	(11)	(9)	(7)	(10)	(16)	(29)	(29)	(28)	(19)
61	83	155	28	51	205	297	406	542	264
—	—	27	12	—	—	—	21	—	—
61	83	182	40	51	205	297	427	542	264
468	442	675	807	831	979	1,113	1,275	1,373	1,486
1,234	1,217	1,329	1,385	1,401	1,460	1,638	1,915	2,441	3,267
178	199	212	215	207	242	227	253	326	276
798	744	881	971	837	749	691	759	910	1,612
130	123	181	189	180	267	344	397	514	564
169	110	119	165	165	246	281	277	274	248
849	953	1,103	1,128	1,293	1,453	1,688	2,030	2,463	2,631
2,370	2,449	3,012	3,053	3,147	3,473	3,967	4,490	5,470	6,339
.93	1.23	2.24	.40	.67	2.53	3.67	5.01	6.70	3.24
.89	1.21	2.64	.58	.66	2.53	3.67	5.28	6.70	3.24
.40	.45	.60	.45	.20	.55	.78	1.05	1.35	1.80
12.88	14.13	15.98	16.25	16.79	17.96	20.86	25.09	30.45	31.83
11.38	19.94	10.00	9.69	11.81	13.13	16.94	23.44	33.25	23.00
145	163	309	164	174	425	545	619	831	546
115	117	268	208	138	251	333	495	752	974
62	62	64	61	60	61	63	65	67	66
64	50	48	47	43	40	37	35	37	47
66	69	69	71	81	81	81	81	81	83
55	46	45	42	53	47	43	39	39	48
33	45	44	43	34	39	45	53	53	45
12	9	11	15	13	14	12	8	8	7
7	9	18	4	4	15	19	23	24	10

Operating Companies

Canada

Aluminum Company of Canada, Limited
Alcan Canada Products Limited
Alcan Smelters and Chemicals Ltd
Alcan-Price Extrusions Limited (50%)
Revalex (1978) Inc.
Roberval and Saguenay Railway
Company, The
Saguenay Shipping Limited
Vic Metal Corporation

United States

Alcan Aluminum Corporation

Bermuda

Alcan (Bermuda) Limited

Jamaica

*Alcan Jamaica Company
Alcan Products of Jamaica Limited
Jamalcan (93%)
Sproston (Jamaica) Limited

Trinidad

Chaguaramas Terminals Limited
Geddes Grant Sproston Industries
Limited (49%)
Sproston (Trinidad) Limited

Argentina

Camea S.A.

Brazil

Alcan Alumínio do Brasil S.A.
Alumínio do Brasil Nordeste S.A.
Mineração Rio do Norte S.A. (24%)
Petrocoque S.A. (25.1%)

Colombia

Aluminio Alcan de Colombia, S.A. (49%)

Mexico

Alcan Aluminio, S.A. (48.72%)

Uruguay

Alcan Aluminio del Uruguay S.A. (89.92%)

Venezuela

Aluminio de Venezuela, C.A.
(Alcanven) (49%)

Belgium

S.A. Alcan Aluminium Benelux N.V.

France

Aluminium Alcan de France
Cargo Van S.A. (50%)
Société Anonyme des Bauxites et
Alumines de Provence
Technal France S.A. (75%)

Germany

Alcan Aluminiumwerke GmbH
Alcan Ohler GmbH (95%)
Aluminium Norf GmbH (50%)
Cargo Van Fahrzeugwerk GmbH (50%)

Ireland

*Alcan Ireland
Aughinish Alumina Limited (40%)
Unidare Limited (25.5%)

Italy

*Alcan Alluminio S.p.A.

Netherlands

Hunter Douglas N.V. (25.17%)

Spain

Empresa Nacional del Aluminio
S.A. (ENDASA) (42.69%)

Switzerland

Aluminiumwerke AG Rorschach

United Kingdom

Alcan Aluminium (U.K.) Limited
Alcan Ekco Limited (50%)
Alcan Enfield Alloys Limited (50%)
Cargo Van Equipment Limited (50%)
Thomas Bennett Gulf (Private) Limited
(49%)

Ghana

Ghana Aluminium Products Limited (60%)

Guinea

Compagnie des Bauxites de Guinée (13.77%)

Nigeria

Alcan Aluminium of Nigeria Limited
(58.21%)

Alcan Aluminium Products Limited (60%)

South Africa

Hulets Aluminium Limited (24%)

India

Indian Aluminium Company, Limited
(55.27%)

Indonesia

P.T. Alcan Indonesia (70%)

Japan

Nippon Light Metal Company, Ltd. (50%)
Toyo Aluminium K.K. (50%)

Malaysia

Aluminium Company of Malaysia
Berhad (40%)
Johore Mining and Stevedoring Company
Sdn Berhad (52.5%)

Thailand

Alcan Thai Company Limited

Australia

Alcan Australia Limited (70%)
Alcan Queensland Pty Limited
Alcan Queensland Smelter Limited
Queensland Alumina Limited (21.39%)
Quintrex Marine Pty Limited (70%)
R. & W. Vincent Pty Limited (70%)

New Zealand

Alcan New Zealand Limited (69.2%)

Holding and Financial

Alcan Aluminium (Europe) S.A., Geneva
Alcan Aluminio da América Latina Ltda,
Rio de Janeiro

Alcan Europe N.V., Amsterdam
Alcan Finances Overseas N.V.,
Amsterdam

Research, Engineering and Operations Technology

Alcan International Limited, Montreal
Research laboratories: Jonquiére,

Quebec; Kingston, Ontario;
Banbury, England; Alicante, Spain

International Sales

Alcan Aluminio (América Latina) Inc.,
Montreal—Latin America
Alcan Aluminium Africa and Middle
East Ltd, London—Middle East
and Africa
Alcan Asia Limited, Hong Kong—Asia
(excluding U.S.S.R. and Middle East)
Alcan Canada Products Limited,
Toronto—Canada
Alcan Ingot and Powders (Division
of Alcan Aluminum Corporation),
Cleveland—USA and Caribbean
Alcan Lynemouth Limited, London—
UK, Ireland, Scandinavia

Alcan Metall GmbH, Frankfurt—
Continental EEC countries
Alcan Metal Marketing Ltd,
Montreal—International
Alcan S.A., Zurich—Continental
Europe (excluding EEC and
Scandinavia), and COMECON
countries
Alcan Basic Raw Materials Limited,
Montreal—Worldwide
Alcan Shipping Services Limited,
Montreal—Worldwide
Alcan Trading (Bermuda) Limited,
Hamilton, Bermuda—Worldwide

* Unit of Aluminum Company of Canada, Limited

Alcan Aluminium Limited

10-K Report

A copy of the company's annual 10-K report for 1981 to be filed with the United States Securities and Exchange Commission will be available to shareholders after 1 April upon written request to the Secretary of the company.

Terms

- All amounts are reported in United States dollars and all quantities in metric tons, or 'tonnes'. A tonne is 1,000 kilograms, or 2,204.6 pounds.

Trademark

The word **ALCAN** and the symbol are registered as trademarks in some 90 countries, and they are owned, directly or indirectly, by Aluminum Company of Canada, Ltd.

Stock Exchanges

The shares of Alcan Aluminium Limited are listed on the Montreal, Toronto, Vancouver, New York, Midwest, Pacific, London, Paris, Brussels, Amsterdam, Frankfurt, Basel, Geneva, Lausanne and Zurich stock exchanges. The markets where most of the shares are traded are New York and Toronto.

Transfer Agents

National Trust Company, Limited, Montreal, Toronto, Winnipeg, Regina, Calgary, Vancouver. Mellon Bank, N.A., Pittsburgh. Citibank, N.A., New York. Morgan Grenfell & Co. Limited, London.

Registrars

The Royal Trust Company, Montreal, Toronto, Winnipeg, Regina, Calgary, Vancouver. Pittsburgh National Bank, Pittsburgh. Manufacturers Hanover Trust Company, New York. The Royal Trust Company of Canada, London.

Shareholder Investment Plans

Dividend Reinvestment Plan

Shareholders can reinvest their cash dividends in newly issued Alcan shares at a 5% discount from market value.

Optional Stock Dividend Plan

Shareholders can elect to receive their dividends in the form of newly issued Alcan shares at a 5% discount from market value.

Share Purchase Plan

Shareholders can purchase newly issued Alcan shares at market value.

Each plan enables shareholders to acquire newly issued Alcan shares at regular intervals without payment of brokerage commissions or service charges. For information write—or call collect:

Alcan Shareholder Services
P.O. Box 6077, Montreal, Canada
H3C 3A7
Telephone: (514) 866-4411

Alcan Aluminium Limited

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Canada H3C 3H2



